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THE AUTOPSY *

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The word autopsy is defined in Webster's International Dictionary for 1926 as a "dissection of a dead body for the purpose of ascertaining the cause, seat, or nature of a disease." The usual definition, however, fails to express the full significance of the procedure, and in this discussion I shall regard the term as meaning a postmortem examination of the body to determine the pathologic processes present, in their relation to clinical phenomena and history, their interest for the surviving relatives, their importance to the community as a whole, and their value in study of the cause, processes and nature of disease. In the modern sense, the autopsy is a complete examination of the thorax, abdomen, head and spinal canal, and such other regions as are necessary. The autopsy being a scientific inquiry, the record, both verbal and pictorial, should be objective, accurate and complete. It should cover not only those structures which are the seat of obvious alteration, but all the organs of the body, because the presence of certain normal viscera is often quite as significant as the presence of those which are diseased. Gross examination should be amplified by microscopic studies and such other investigations as may be indicated.

The purpose of the autopsy as thus expressed has been elaborated by other writers. For example, Robertson [1] says that "the major purpose is not to determine why the patient died, but rather what happened to the patient while he lived." Pearl,[2] from a somewhat different point of view, states that "its fundamental purpose is to make possible in some degree the reconstruction of the course of physiological (or pathological) events which led to death, so that a correlation may be effected between clinical findings and the actual state of the organs of the body." Furthermore, "it is possible to conceive a still broader and more fundamental usefulness of pathological anatomy, . . . namely, as an aid in the solution of problems in general biology." A purpose of importance to the state is the securing of "knowable facts or group of facts, considered with a view to its being offered before a legal tribunal for the purpose of procuring a conviction, positive or negative, on the part of the tribunal as to the truth of a proposition on which the determination of the tribunal is to be asked." To those skeptics who say "Why seek ye the living among the dead?" we may answer with Wilson,[3] "mortui vivos docent."

The derivation of the word indicates that it means examination of self. The word necropsy means examination of the dead body. The former word, autopsy, has attained such wide employment that it can be adopted by the rule of good usage. The press of the American Medical Association prefers necropsy but accepts also autopsy.

HISTORICAL

In the modern sense, the autopsy is an institution dating from not earlier than the middle of the last century. The historical aspects are well covered by Chiari.[4]

Judging by such records as are available, autopsies were first performed for medicolegal reasons, sometimes for religious purposes, and somewhat later to determine the cause and nature of certain epidemics. Curious as it would seem to attempt to determine the abnormal without a knowledge of the normal, Singer [5] states that the autopsy was practiced before the anatomic dissection became established.

There is no real evidence for believing that the early physicians of the Near and Far East performed autopsies, and it is certain that in many lands religious views precluded desecration of the body. Of the Greeks, Hippocrates knew only external manifestations, and Aristotle's information came probably solely from the dissection of animals. Körner [6] thought that the Homeric poets exhibited a greater knowledge of anatomy than could have been obtained from animal dissections and observations of the wounded, and suggests that there may have been dissection of fallen enemies. Fuld [7] holds the view that Körner's assumptions are incorrect. The Alexandrians performed autopsies and made dissections, but the records have been lost. Nevertheless, Erasistratus is said to have observed that in cases of ascites the liver is of stony hardness.

There has been, and continues to be, much discussion of the attitude of the Jews toward autopsies. Spivak [8] has examined the conditions in Talmudic times and

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* Based on a paper read before the Interstate Post Graduate Assembly in Cleveland, Oct. 19, 1926, and reported briefly in the proceedings of that session.

1. Robertson, H. E.: Better Postmortem Service, J. Lab. & Clin. Med. **10**: 486 (March) 1925; Our Responsibility to Our Deaths, South. M. J. **18**: 125 (Feb.) 1925.

2. Pearl, Raymond: Biometrical Studies in Pathology: II. Pathometric Index Numbers: Preliminary Account of a Quantitative Method of Evaluating Pathological Phenomena, Bull. Johns Hopkins Hosp. **33**: 406 (Nov.) 1922.

3. Wilson, L. B.: The Necropsy as a Public Service, J. A. M. A. **64**: 1560 (May 8) 1915; Microscopic Examination of Fresh Tissue, and Necropsy Service in Relation to Surgery, Ann. Surg. **81**: 863 (April) 1925.

4. Chiari, H.: Geschichte der pathologischen Anatomie des Menschen, Handbuch der Geschichte der Medizin, Jena, T. Puschmann, 1903.

5. Singer, C.: The Evolution of Anatomy, London, 1925.

6. Körner, O.: Wie entstanden die anatomische Kenntnisse in Ilias und Odyssee? München med. Wchnschr. **69**: 1484 (Oct. 20) 1922.

7. Fuld, E.: Prähomerische Sektionen, München med. Wchnschr. **69**: 1731 (Dec. 15) 1922.

8. Spivak, C. D.: Postmortem Examinations Among the Jews, New York M. J. **99**: 1185, 1914.

finds that the problem was given considerable attention. Autopsies were not permitted if they were an indignity to the dead, but were permitted when they were an honor to the dead. When the autopsy might aid in the treatment of a living patient with the same disease, it was permitted. When such an ill person was "not before our eyes," the autopsy was not permitted, nor was it allowed for experimental or general educational purposes. Under these circumstances, it is obvious that medicine could make little progress.

In Rome, Galen, a Greek, made dissections but principally on animals, and without any apparent attention to pathologic anatomy. Celsus, the first outstanding Roman writer on medicine, although an experimental pathologist, probably did not perform autopsies.

In the early middle ages, medical science contributed nothing of importance in Christian countries, and in spite of the wonders of Byzantium, Arabic medicine did not make any important steps forward because of the direct instructions of the Koran against desecration of the body. At a later period dissection was practiced in Salerno, and occasional pathologic notes were made. Perhaps, owing to the stimulus to observations of nature furnished by Roger Bacon and Villanova, postmortem examinations became more numerous. During the plague of 1286, a physician of Cremona examined one of the bodies to determine the nature of the disease. Singer states that this is the "first frank reference to a postmortem examination." In the fourteenth century, autopsies were performed at Salerno, Bologna and Padua, in order to learn the nature of disease. It is reported that in Guadeloupe a school of pathologic anatomy was established, and that autopsies were numerous.

Vesalius, Eustachius, Paré and especially Donatus made important contributions to pathologic anatomy both by dissections and by autopsies. At this period the greatest contributions to medicine through the autopsy were by Schenck von Grafenburg, city physician of Freiburg, who published a systematic report of his work.

In the seventeenth century, such men as Bartholin, Malpighi, Glisson and Sylvius performed autopsies and made important observations. Riva (1627-1677), physician to the pope, founded a society for pathologic anatomy and established a morbid anatomic museum. Serious attempts were made to correlate anatomic observations and clinical disease, and in the latter part of this century Theophilus Bonetus (1620-1689) published the famous "Sepulchretum seu Anatomia Practica."

Although there are many prominent names in the eighteenth century, the outstanding figure of the early part of this period is Giovanni Battista Morgagni[9] (1682-1772), professor at Padua, who was really the founder of pathologic anatomy. His book, De Sedibus et Causis Morborum per Anatomen Indigatis, published in his seventy-ninth year, represents an amazing collection of material arranged for the purpose of clinical-pathologic correlation. With the modesty of greatness, he attributes much of his achievement to the Sepulchretum of Bonetus. Although his autopsies were searching in the extreme, they were not systematic in the modern sense, and the records do not show anything of the completeness demanded of the present-day pathologist. The autopsies made by John Hunter (1728-1793) were definitely more systematic, but the records appear to be little more than what we now include in the anatomic diagnosis. His nephew, Matthew Baillie (1761-1823), followed essentially the same methods, and in collecting his material produced the first important book on pathologic anatomy.[10]

In the nineteenth century, three names stand out in pathologic anatomy: Bichat, Rokitansky and Virchow. Marie François Xavier Bichat (1771-1802) improved the autopsy by histologic study of the material. Carl Freiherr von Rokitansky (1804-1878) performed systematic autopsies and made careful but not complete records. His keen observation, logical deductions and close association with Skoda made him the outstanding pathologic anatomist of the time. In March, 1866, when he was 58 years of age, he performed his thirty-thousandth autopsy. Rudolph Virchow (1821-1902), by the application of chemical and histologic methods, placed the autopsy on a high plane of efficiency, and established modern pathologic anatomy.

On this continent there are records of postmortems for the investigation of epidemics and for religious and medicolegal purposes. To consider these autopsies in the modern sense would be inaccurate, but they were examinations of dead bodies. Chavarria and Shipley[11] (see also Hektoen[12]) report the dissection of the Siamese twins of Española, in 1533, in order to determine whether there were two souls. Lewis[13] states that according to the narrative of Samuel de Champlain, autopsies were performed in the spring of 1605 at St. Croix Island, and in the winter of 1605-1606 at Port Royal, in order to determine the nature of a prevalent disease, presumably scurvy. Steiner[14] reports autopsies for legal, medical or religious purposes in 1639, 1643, 1657, 1659, 1662 and 1663. Packard[15] refers to autopsies in 1674 and 1676. All these reports indicate that the performance was infrequent, often incomplete and without thorough records.

The first course in pathologic anatomy was given at Cincinnati by Samuel D. Gross (1805-1884) in 1835, and in 1839 he published the first American treatise on this subject.

It will be seen that the modern autopsy is the culmination of advances made through many centuries, and that various sciences have contributed to its development. Out of these bygone days comes from the sixteenth century an admonition by Bonetus (quoted from Renouard[16]) which is as true today as in those old times when it was written:

> Let those who interdict the opening of bodies well understand their errors. When the cause of a disease is obscure, in opposing the dissection of a corpse which must soon become the food of worms; they do no good to the inanimate mass, and they cause a grave damage to the rest of mankind; for they prevent the physicians from acquiring a knowledge which may afford the means of great relief, eventually, to individuals attacked by a similar disease. No less blame is applicable to those delicate physicians, who, from laziness or repugnance,

9. Morgagni, G. B.: The Seats and Causes of Diseases Investigated by Anatomy, etc., translated by B. Alexander, London, 1769

10. Baille, Matthew: The Morbid Anatomy of Some of the Most Important Parts of the Human Body, London, 1793.

11. Peña Chavarria, A., and Shipley, P. G.: The Siamese Twins of Española (the First Known Postmortem Examination in the New World), Ann. M. History **6**: 297 (Sept.) 1924.

12. Hektoen, Ludvig: Early Postmortem Examinations by Europeans in America, J. A. M. A. **86**: 576 (Feb. 20) 1926; Necropsy Percentage in Relation to Hospital Efficiency, ibid. **82**: 949 (March 22) 1924.

13. Lewis, J. W.: Bull. Johns Hopkins Hosp. **16**: 199, 1905.

14. Steiner, W. R.: Some Early Autopsies in the United States, Bull. Johns Hopkins Hosp. **14**: 201, 1903.

15. Packard, F. R.: The Earliest Recorded Autopsies in America, Philadelphia M. J. **5**: 410, 1900.

16. Renouard, P. V.: History of Medicine, translated by C. G. Comegys, 1856, p. 305.

love better to remain in the darkness of ignorance than to scrutinize, laboriously, the truth; not reflecting that by such conduct they render themselves culpable toward God, toward themselves and toward society at large.

LEGAL RESTRICTIONS

"A certain right of property in a corpse is recognized in law as belonging to the next of kin, or other person charged with the legal duty of burial; and the performing of an unauthorized autopsy has been uniformly held to be such a violation of this right as will give the aggrieved person a right of action for damages against the offender." [17] Exceptions are provided by statutes authorizing coroner, medical examiner, board of health or other official to order an autopsy.

An exhaustive study of the situation as it affects the state of New York has been made by Kennard,[18] but it is difficult to secure an analysis of the statutes throughout the United States. It seems, however, that the chief concern of the states is to provide proper basis for the prosecution of criminals. The states may also attempt aid in the control of infectious disease by authorizing health officers to order or conduct autopsies. Generally speaking, however, the performance of autopsies under other circumstances is governed by statutes which primarily are directed toward the protection of the next of kin or other duly authorized person or relative, rather than toward such purposes as correct vital statistics, investigation of disease and education of students and physicians. It would seem that the laws exhibit a sentimentalism which probably in part at least is a relic of primitive superstitions and religious dogmas. The ceremony of the funeral is recognized in all societies, and so far as it brings us face to face with the finality of natural law, and the supremacy of the spirit, is of value. To many the corpse is the symbol of the living soul, and represents the outward form of a loved one. These facts should be recognized in the building up of codes regarding the performance of autopsies, and the public should be protected against the rare ghoul who has no respect for the finer sensibilities of human nature. Nevertheless, as will be indicated subsequently, the autopsy is essential to the progress of medicine, and civil laws should be adjusted to recognize the need for more frequent and more complete autopsies. The law should consider first the interests of society at large, and can easily give greater freedom to the physician without withdrawing a reasonable measure of protection to the individual against unnecessary mutilation of his dead. The law should assume that the autopsy is an essential procedure and that it will be performed in all cases of death, from either "natural" or accidental causes. It should assure the public that the examination will be made by a competent person and that the body will be left in a suitable condition for the funeral ceremony. The consent should be given by the state rather than the individual, granting to the latter the privilege of withdrawing consent only for good and sufficient reasons. This idea has been attained in European countries and should prevail in our own states.

It is doubtful whether an interpretation of existing statutes drawn up for the protection of the individual, so as to meet the needs of scientific inquiry, will be of permanent value, because if an interpretation is made not in harmony with the intent of the law, provisions may be added to clarify the special purpose of the act. Krumbhaar [19] understands that in one state legal opinion has been given that, since the law compels the physician to give a certificate of the cause of death, in the absence of other law to the contrary, it presupposes that the physician has the right to take necessary measures to ascertain that cause. If the intent of the law concerning the furnishing of death certificates did not include the autopsy as the only means for determining the exact cause of death, such intent could be made clear by a revised statute. Furthermore, the interpretation given is in conflict with the presumed fundamental property right in the corpse. What is more desirable than such interpretation is the deliberate and considered act of the state to conform with the principle given at the end of the preceding paragraph.

IMPORTANCE TO THE STATE

The interest of the state should be excited by pointing out the value of the autopsy to the common welfare. Of fundamental importance is the fact that only by the autopsy is the exact nature of disease or lesion made known. It is not uncommon to see civil and criminal courts flounder in misunderstandings because there has not been an autopsy. Insurance companies recognize this and are increasing their requests for autopsy. It may be answered that the coroner or medical examiner protects the public against abuses on these especial grounds, but too often the coroner acts under restricting laws and conditions which sadly handicap the full performance of what would logically seem to be his duties.

As a rule, infectious diseases are perfectly apparent, but there are instances in which a knowledge of infectious disease is withheld or the physician is ignorant of its presence. The relation of the autopsy to the duties of the public health officer is not to be regarded lightly, for the autopsy may easily give information on which the health officer can act with benefit to the community. The compilation of vital statistics gives data concerning the incidence of various fatal diseases, and informs the community as to its dangers and the success or failure of preventive or remedial measures. If the primary data be founded largely on such a fallible source as clinical diagnosis, no known mathematical factor can be adduced to correct the error. Autopsy material is the only satisfactory basis for compiling vital statistics. Wilson suggests that the death certificate, even when an autopsy has been performed, should arrange for tentative diagnoses sufficient for the issuance of burial permits, to be amplified by further microscopic and chemical examinations for final filing. It might be well to regard all clinical diagnoses not supported by autopsy data as tentative. The reason for this will be pointed out in the discussion of clinical and pathologic diagnosis.

Wahl [20] states, in a comparison of similar hospitals, that about eight times as many autopsies are performed abroad as in this country. This figure is most favorable in Germany, but Lubarsch [21] points out that even there less than 5 per cent of the dead are examined post mortem. With the most liberal interpretation, this would mean that in the United States autopsies

17. Childs, L.: Law for the Doctor, Mod. Med. **3**: 63 (Jan.) 1921.
18. Kennard, K. S.: The Legal Relation of the Autopsy, New York State J. Med. **26**: 390 (May 1) 1926.
19. Krumbhaar, E. B.: The Need for Postmortem Examinations and Methods of Securing Them, J. A. M. A. **80**: 1682 (June 9) 1923.
20. Wahl, H. R.: Modern Pathology in General Practice, J. Kansas M. Soc. **25**: 172 (June) 1925.
21. Lubarsch, O.: Einiges zur Sterblichkeits- und Leichenöffnungsstatistik, Med. Klin. **20**: 299 (March 9) 1924.

are performed on considerably less than 0.7 per cent of the dead. Subsequently, consideration will be given the errors of clinical diagnosis as compared with autopsy observations in a general service. In regard to malignant tumors alone, Lubarsch points out that the records of death certificates disclose only a little more than half the actual cases. It is probable that in this country the vital statistics are based on diagnoses more than 99 per cent of which are clinical. In addition to unavoidable errors in clinical diagnosis, Doane [22] expresses the view that the death certificate may withhold information by reason of sympathy for relatives or for reasons concerned with insurance, and says that "one cannot help being impressed by the utter worthlessness of present-day civilian mortality statistics."

Another relation in which accurate diagnosis may be of value to the state is contained in the following note by Prof. C. M. Finfrock.[23] "The many and variable reactions of human beings to stimuli, resulting in overt acts which society says constitute wrongs, since they are a violation of the prescribed rules of law, must have, in many cases, explanations based upon pathology. These things we should know, not for the purpose necessarily of punishing for a crime already committed, but for the proper understanding of how to prevent the same thing happening in the future." The modern state recognizes its obligations in regard to the prevention of crime, and the autopsy may well furnish evidence as to some of the methods whereby this objective may be accomplished.

With due respect for educational, sociological and other agencies supported for the welfare of the state, the education of its physicians is of outstanding importance. This matter will be discussed more fully, but at this time it may be said that the performance of autopsies, together with a correlation of their results with the clinical examinations, is one of the most significant features of the education of physicians in their undergraduate and graduate periods.

It becomes apparent from this cursory examination of the matters directly affecting the public that the state owes itself a high duty, not only in protecting the physician in the performance of the autopsy but also in enlarging his opportunities. The medical profession should not be granted state consent as a privilege, but the state should urge on the profession the utilization of all means available, including the autopsy, for the study of disease and the improvement of the health of the public.

DIFFICULTIES OTHER THAN THOSE IMPOSED BY LAW

If, as stated above, autopsies are performed on less than 0.7 per cent of our dead, reasons for this small number must be sought elsewhere than in the legal restrictions. Concern over this matter is indicated by the large number of publications dealing with the autopsy percentages in hospitals. Gardiner [24] maintains that the greatest obstacle is the law, but also to be considered are the attitudes of the undertakers, religious beliefs, medical cults, and indifference or actual opposition on the part of the professional staff of the hospital. To these Wilson adds the ignorance of the public concerning the importance of the autopsy to science and public welfare, the inadequate rules of hospitals, and the claims of the department of anatomy. Robertson emphasizes the view that if physicians will not have autopsies on their own relatives, they should not expect to ask consent of others. This is definitely indicated by Sturgis [25] as applying to physicians, nurses and clergymen. Friedrichs [26] deplores the lack of interest on the part of clinicians, and says that in a series of 1,350 autopsies only one in fifty was attended by clinicians. This small attendance is probably not general, but reflects in its extreme an unfortunate tendency.

As has been pointed out, the rabbis of the Talmud required convincing evidence that an autopsy honors the dead or may give immediate beneficial information, if it is to be permitted. Frank [27] indicates that the same views continue to be maintained by the orthodox Jews. Hammond [28] quotes opinion that the rabbinical law does not forbid the autopsy and that if the cause of some serious disease may be discovered, the autopsy sanctifies rather than desecrates the dead. Spivak quotes a ruling of the Jewish Consumptives Relief Society that every person who presented during life symptoms not thoroughly understood should be examined post mortem. These facts, and the fairly high autopsy percentage of certain Jewish hospitals, would indicate that the present-day interpretations of Judaism do not prohibit autopsies. It seems likely that the religion is blamed for a reluctance inherent in the sensitiveness and family loyalty of the Jew rather than in his religious beliefs. The physician who will not permit an autopsy on his own relatives cannot have a case against the Jew. The Catholic Church does not forbid the autopsy, and many personal experiences with members of the priesthood would indicate a cordial sympathy with modern scientific medicine.

Chandler [29] explains why the undertaker is not infrequently opposed to the autopsy. Analysis shows that this opposition is due in part to the failure of the undertaker to understand the value of the autopsy, in part to his lack of expertness as an embalmer, and in part to the neglect of reasonable precautions on the part of the pathologist. The National Association of Morticians has the matter under serious consideration. In the meantime, however, local organizations have attempted to correct the situation. In Cleveland, a conference between committees of the Undertakers Club and the Academy of Medicine was productive of great good. Numerous other communities have had the same experience.[28] Investigations of embalming fluids, such as that conducted by Kolmer and Boerner,[30] should be helpful.

In medical educational centers, the suggested claims of the anatomist must be considered. A distinguished anatomist states that:

> Even if the adequate and invariable autopsy, which would be the ideal condition, came into operation, there should be no conflict between the departments of anatomy and pathology.

22. Doane, J. C.: The Questionable Value of Present Mortality Statistics, J. A. M. A. **79**: 1868 (Nov. 25) 1922.
23. Finfrock, C. M.: Personal communication to the author.
24. Gardiner, J. C.: Autopsies, Boston M. & S. J. **194**: 724 (April 22) 1926.
25. Sturgis, C. C.: Methods of Obtaining More Necropsies, Mod. Hosp. **16**: 497 (June) 1921.
26. Friedrichs, A. V.: The Important Relationship of Postmortem Examinations to Clinical Medicine, New Orleans M. & S. J. **78**: 604 (March) 1926.
27. Frank, L. J.: The Autopsy as an Essential to the Progress of Diagnosis in Medicine, Mod. Hosp. **24**: 148 (Feb.) 1925.
28. Hammond, F. C.: Overcoming Opposition to Autopsies, Mod. Hosp. **25**: 333 (Oct.) 1925.
29. Chandler, A. H.: Requirements for Cooperation Between Hospitals and Funeral Directors, Boston M. & S. J. **194**: 728 (April 22) 1926.
30. Kolmer, J. A., and Boerner, F.: Studies in Embalming Fluids in Relation to Necropsies, J. Lab. & Clin. Med. **11**: 608 (April) 1926.

Anatomy of the future will be a study of the living, active body, untrammeled by the traditions of medievalism current today. It will have a closer relation to medical work than is the rule in this country in our generation. Sufficient entire bodies will be released for adequate study of the trunk and head, and autopsy material in unlimited amount will become available. The dissecting room with its limitations imposed by embalming and preservation is not the place where visceral anatomy can best be observed; for that purpose the autopsy room is the correct site. For work on limbs and for fundamental investigations upon growth, differentiation and movement, the anatomical laboratory will always hold its own. In short, research which does not call for speed in observation on account of perishable material is the special province of anatomy, which will more and more call to its aid such technical methods as the radiogram and the fluoroscope to render its studies accurate and complete.

The obstacles outlined above may all be overcome by education—education of the physician, the nurse, the clergyman, the undertaker and the public concerning the value of the autopsy, and education of the pathologist concerning his high duty to medicine and his obligations to relatives, undertaker and the public.

EDUCATIONAL VALUE TO THE PHYSICIAN

The autopsy is of unquestioned value in the training of medical students and in the further education of the physician. A physician must know, so far as possible, the cause, processes and nature of disease in order to diagnose, prevent and aid nature in the cure of disease. Clinical diagnosis is the foundation on which the art of medicine rests. This foundation reaches only so deep as physics, chemistry, anatomy and physiology penetrate. Their further development renders this foundation more and more secure. On the foundation rest the superstructure of the cause of disease and its prevention, and the nature of disease and its alleviation, and in these fields the majority of physicians find their life work.

The autopsy not only serves to train the student in gross morbid anatomy but also by proper correlation leads him to an evaluation of methods of clinical diagnosis. He may learn to have dependence on certain methods which yield dependable results as revealed by the autopsy, and he may learn to suspect methods which prove on postmortem examination to be misleading. The latter lesson is especially important when it leads to improvement of diagnostic procedures.

"Only the pathologist [or the clinician who follows his patients to autopsy] realizes how many patients with hysteria have brain tumors; in how many heart cases there are no valvular lesions, but nephritis; and that 10 per cent of all old persons die with unsuspected cancer." [31] These categories might be considerably augmented. "The greatest diagnosticians of this and the past generations have been those who spent years studying their fatalities at the autopsy table." [32]

The files of such a journal as the *Modern Hospital* will show the seriousness with which the hospital administrator regards the problem of autopsies. Such statements as those of Bluestone [33] are significant. "Broadly speaking, no hospital is larger than its pathological laboratory. . . . The progressiveness of a hospital is in direct ratio to the laboratory spirit which it maintains." He points out that in one hospital there were autopsies on 56 per cent of the dead. "In other words, we were unable to explain 44 per cent of our deaths except by indirect evidence. This figure represents our scientific deficit for the year." Christian [34] points out that the educational value of the hospital depends on its industry in searching for errors in diagnosis and attempting to correct them; he advises prospective interns to select their hospital service largely on the basis of the autopsy percentage. Hektoen [12] considers the autopsy as it affects investigation of disease, the education of the physician and the public, its importance for medicolegal and statistical purposes, and its significance for the family. "It follows that the hospital which neglects the autopsy thereby limits its usefulness. Consequently, no words need be wasted in an argument in favor of the proposition that necropsy percentage is an index of hospital efficiency."

The performance and recording of an autopsy are in themselves of value, but this is augmented materially if the pathologist, with a knowledge of the clinical features, and the clinician, in the light of the autopsy data, enter into conference, with a mutual desire to be helpful and to analyze the features of the case with a logical consideration of etiology, diagnosis and treatment.

What applies to the hospital also applies to the private practitioner. Waite [35] has elaborated a system by which a private club conducts autopsies on the cases of its members, and carries on clinicopathologic conferences. At first glance, this might be regarded as utopian, but the answer is that it works. Physicians in large medical centers have at hand expert pathologists, who as a rule are more than willing to be of service.

ERRORS OF DIAGNOSIS

Numerous papers have been published which show the possibilities of error in clinical diagnosis as compared with autopsy observations. None of these, so far as I know, has given an examination of the statistical material on the basis of real mathematical analysis. In other words, these statistics have not been corrected with regard to the various factors of error. The outstanding source of error probably cannot be corrected mathematically. I refer to the fact that autopsies in this country are performed principally on cases in which the clinical diagnosis is more or less doubtful. In some of these, the condition in life was frankly unknown to the clinician. In others, the diagnostic features were confusing and the conclusion as to the nature of the case only a deduction on admittedly questionable premises. In still others, features of unusual interest, aside from the main issue of diagnosis, have called for the autopsy.

On the basis of material such as this, Cabot [36] showed a high percentage of error. We [37] found in 600 autopsies a gross error of clinical diagnosis, in which not even the principally diseased organ was indicated, which reached 8 per cent, figures approximately the same as those of Friedrichs. Minor errors, some of which were regarded as gross by critical clinicians, were

31. Wood, F. C.: The Relation of Pathology to Practice, J. A. M. A. **73**: 569 (Aug. 23) 1919.
32. Mills, R. G.: Autopsy Examination—An Index of Professional Efficiency, Colorado Med. **23**: 133 (April) 1926.
33. Bluestone, E. M.: The Value of Postmortem Examinations and Methods of Obtaining Them, Mod. Hosp. **18**: 423 (May) 1922.
34. Christian, H. A.: Selecting a Hospital for an Internship, J. A. M. A. **86**: 1499 (May 15) 1926.
35. Waite, W. W.: An Experiment in Postgraduate Home Work, Texas State J. Med. **20**: 589 (March) 1925.
36. Cabot, R. C.: Diagnostic Pitfalls Identified During a Study of Three Thousand Autopsies, J. A. M. A. **59**: 2295 (Dec. 28) 1912.
37. Karsner, H. T.; Rothschild, Leonard; and Crump, E. S.: Clinical Diagnosis as Compared with Necropsy Findings in Six Hundred Cases, J. A. M. A. **73**: 699 (Aug. 30) 1919.

found in a much larger percentage. These autopsies were performed on the patients of highly capable clinicians. There remains, however, a serious question as to whether or not these figures represent the percentage of error in the general run of patients. It would seem probable that, if all the dead were subjected to autopsy, the percentage of diagnostic error might be materially lowered. Nevertheless, even admitting a marked reduction in these published figures in a more representative material, the factor of error must still show that diagnostic precision has by no means attained the ideal of accuracy. This is emphasized by the fact, pointed out above, that less than 1 per cent of the dead in this country come to autopsy.

Clinical medicine is ever striving toward improvement of diagnostic methods. The criterion of such improvement is to be found in the autopsy, which should be utilized continuously for the evaluation of success or failure. The autopsy should serve not only to point out errors but also to show successful diagnoses. Thus, fallacious methods of diagnosis may be subjected to more critical examination and satisfactory methods used as a basis for further improvement. "The education of the medical profession by accurate postmortem diagnoses is a veritable safeguard to the public welfare."

IMPORTANCE OF THE AUTOPSY TO RELATIVES

The interest of the autopsy to the surviving relatives is in a certain sense a corollary of the discussion of accurate diagnosis. The intelligent public can be educated to understand its duty to the common good. To others, it may be necessary to point to reasons which affect them individually. Thus, it is of importance to every member of a family to know exactly what caused the death of his relatives. This is emphasized in the family histories obtained in every thorough medical examination. If there be a heritable disease, it should be known. Even if this be not the case, it may be that the disease is in part dependent on some habit of life, which can be avoided by the survivors. Many fatal diseases, acute or chronic, are directly or indirectly attributable to infection. If the survivor has suffered from the same infection, his life may be so directed as to prevent or delay the subsequent serious manifestations.

Perhaps of greatest interest in the predisposing or exciting causes of disease is heredity, and at the present time this interest centers about cancer. Wells [38] points to the large percentage of error in the diagnosis of malignant tumors as revealed by the autopsy. He says, "These necropsy statistics show convincingly that we have at the present time (1923) no reliable statistics relative to the frequency of cancer as a cause of death. The futility of attempting to learn anything concerning heredity from such statistics is even more glaringly apparent. A single error in diagnosis may lead to entirely erroneous conclusions in the study of the influence of heredity on cancer in a given family." The error in diagnosis of cancer is also referred to by Lubarsch. The statement of Wells might be applied to other diseases suspected of having a basis in heredity. Thus, without the autopsy, the heritable character of disease may lack conclusive demonstration.

38. Wells, H. G.: Relation of Clinical to Necropsy Diagnosis in Cancer and Value of Existing Cancer Statistics, J. A. M. A. **80**: 737 (March 17) 1923.

THE STUDY OF DISEASE

In my definition of the autopsy, I referred to its importance in the discovery of the cause, processes and nature of disease. Concerning the processes and nature of disease, the isolated single autopsy yields relatively little of importance. Collectively, however, the autopsy widely practiced yields much of value. For satisfactory results, however, the anatomic observations must be correlated with the functional alterations through a study of clinical and physiologic manifestations. I [39] have emphasized elsewhere the fact that as normal anatomy is the basis of normal physiology, so is pathologic anatomy the basis of pathologic physiology. The former is in a general way the basis of the signs of disease, and the latter the basis of the symptoms of the disease. To understand disease we must have information concerning alterations of form and function with a satisfactory correlation between the two. The information concerning the altered form in internal diseases is to be found chiefly, and in many instances solely, in the results of the autopsy.

The four postulates of Koch were set up as criteria for determining the cause of infectious diseases, but their application may be misdirected without a knowledge of the nature of the disease investigated. Diphtheria is often thought of as being a condition in which diphtheria bacilli are present, but it is common knowledge that virulent bacilli may be found in the throats of those who have not the disease. The carrier state has been found in connection with many diseases, but for the most part bacteriologic diagnosis must be regarded as an auxiliary to clinical diagnosis. The organisms must be found constantly in the disease; after isolation and pure culture they must be capable of reproducing the disease, and must again be found constantly. The disease is the thing! And in the vast majority of instances the disease is identified by its pathologic anatomy. For this identification the autopsy is essential. It may therefore be accepted as a general principle that the discovery of the cause of infectious disease hinges on the use of the autopsy method of investigation. What applies to infectious disease is similarly applicable to other types of disease.

DUTIES OF THE CLINICIAN

The duty of the physician to himself and to society is to have a postmortem examination of the body of every patient who dies while under his care. Liberalization of the civil laws governing the postmortem examination is a most essential step in the direction of improvement, but above all other things is education of the clinician to the importance of this procedure, education of the pathologist in its satisfactory performance, and education of the public in regard to its value for the survivors and for the common good.

The clinician should realize that the benefit to be derived from the autopsy rests in large part on the clinical investigation of the case and on complete accurate records. He must understand that the sooner after death the autopsy takes place, the more satisfactory it is. He must also know that even if delayed, the results of the autopsy may still yield useful information. Experienced pathologists have made postmortem examinations of embalmed bodies months after death and burial, and have been able to make diagnoses of value

39. Karsner, H. T.: Pathology and Medicine, Atlantic M. J. **29**: 51 (Nov.) 1926.

in medicolegal and insurance cases. The conditions found have also served to aid in the correlation of the clinical and pathologic features. The body of John Paul Jones was placed in alcohol and the autopsy made 113 years later, with results which through their clinical correlation served to aid in the identification of the body.[40]

DUTIES OF THE PATHOLOGIST

The pathologist should be so skilled in the method of the autopsy that the clinician will be able to reassure relatives as to the repair of the body. In addition to training in method, the pathologist should be familiar with gross anatomic diagnosis and alert to apply any additional histologic, bacteriologic, chemical or other method which will help to clarify the case. He must fully realize that only so far as his records are complete and accurate will his labors have permanent value. His record should be a word picture of the conditions found, and if necessary should be amplified by drawings, photographs and that three dimensional picture, the museum specimen. His autopsy room, equipment and personnel should be such that the autopsy may be well done. His attitude should be that of the investigator approaching his material, not only with a scientific curiosity, but with a respect for the human sensibilities of all concerned. He is not restricted to pathologic anatomy and histology, but, as pointed out by Giordano and Barnes,[41] he can place considerable reliance on his postmortem bacteriologic work, provided the technic be adequate. Furthermore, chemical and immunologic examinations may yield information of importance. He should cooperate with the undertaker so that the latter may do his work satisfactorily. He should repair the body with the utmost care, and keep ever in mind that in most instances his subject is the earthly shell of a life and spirit loved by one or many. He is the trusted representative of the medical profession, and should operate with a full sense of his responsibility to the profession and its future success and to the good will of the public.

CONCLUSION

Education of the public as regards the autopsy is involved in the difficult question of its education in all medical matters. The time has passed when the medical man can hide behind a cloak of priestly authority or a supposedly superior education. He is a human being, with all human fallibility, engaged in a field of biologic science involving the most intricate living material. Intellectual honesty is his stoutest weapon. Frankness in acknowledging the limitations of his science must, with an increasingly intelligent public, lead to sympathy and mutual understanding. A knowledge of the facts is the most worthy foe of quackery. It must therefore be a safe conclusion that a well founded public opinion, cognizant of the constant effort for improvement of medical science on the part of its own votaries, and made acquainted with the need of the autopsy in the search for a truth so directly applicable to human welfare, will ultimately welcome the autopsy as a factor integral to the progress of science and the betterment of our worldly state.

2109 Adelbert Road.

40. MacFarlan, D.: The Oldest Autopsy in History, Hahnemann Month. **50**: 343, 1915.

41. Giordano, A. S., and Barnes, A. R.: Studies in Postmortem Bacteriology: Value and Importance of Cultures Made Post Mortem, J Lab. & Clin. Med. **7**: 538 (June) 1922.

TAKING MEDICAL EDUCATION TO THE PRACTITIONER*

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BROOKLYN

The Medical Society of the State of New York is offering graduate education, without cost, to every physician in the state, whether a member of his county society or not. Fees are not charged, and county societies have not contributed funds for the work; the cost is met entirely by the Medical Society of the State of New York and the state department of health, which has borne most of the cost of the lectures in obstetrics and pediatrics. We are in the second year of our work.

Lectures and demonstrations, clinical as far as possible, have been given in fifty-one of the sixty-two counties of the state; twenty-six counties have had pediatrics, twenty-three, obstetrics, and eleven, both, while fifteen others have had courses of another kind while this work was in progress. Gastro-enterology and general medicine, especially cardiac diseases and hypertension, have been very much in demand.

For the most part, these lectures are scheduled to run from one to two hours on the same day and hour each week for six successive weeks. Each county, however, may have as many lectures as it wants. One county is now having its second series of twenty, and others have had cardiac arrhythmias in two or three two-hour sessions—first the blackboard talk, followed by a detailed study of patients brought for examination, and then a demonstration of the diagnosis of cardiac disease by inspection. Still another county has had cardiac diseases in its own hospital, three hours being given to each session. Attendance was excellent in a large city where lectures were given daily for a week. In another county, we gave an intensive course on hypertension for eight weeks, one day a week, in long sessions, in a hospital in which there was a competent dietitian; the lecturer selected cases for metabolic tests, demonstrating his methods and checking his results from week to week on the same patients.

The actual work of teaching has been done by from fifty to sixty men from the larger cities of the state, who receive for their service the thanks of the committee, traveling expenses, and a small honorarium.

When possible, courses are arranged in adjoining counties, so that lecturers may cover more than one county in the same day, lecturing both afternoon and evening. For one course four counties met at a central point each week, but effort has not been made to save lecturers at the expense of attendance, which, on the whole, has been very satisfactory, men often driving 60 miles to the lectures.

The work of organization is in the hands of the Committee on Public Health and Medical Education, with an office in the Library Building of the Medical Society of the County of Kings, which generously gives us space and provides us with secretarial help of a high order at the cost only of hourly stenographic service. A heavy correspondence is handled with dispatch, and an extensive file of all the educational facilities and opportunities of the state has gradually accumulated. A large pin map is used to indicate our progress from day to day.

* Read before the Annual Congress on Medical Education, Medical Licensure and Hospitals, Chicago, Feb. 15, 1927.

The task has demanded an unusual amount of time and effort, but this could be materially decreased by the employment of full-time help. Arrangement of courses involves thought of time, weather, season, costs, previous courses given, assignment of lecturers, postponements, follow-up, and occasionally cancelation.

Correspondence has been opened with the officers of county medical societies or their program committees, the committee stating that it is ready to give any subject or group of subjects desired, at the time and place selected, if the county society will only promise to secure a satisfactory attendance and provide clinical material for the meetings. The idea has never been to supplant county society meetings, but to supplement them. "Ask for anything you want," we say, "and we will arrange it for you."

We are now planning a practical lecture series for the larger cities of the state, following the plan of lectures that has achieved such phenomenal success in Brooklyn. There the committee, at the beginning of its labors, found a very satisfactory form of graduate education already under way. It is now in its sixth year, and the work throughout the state has been largely modeled on the lessons and experience of Kings County. Its story has often been told,[1] but it will bear brief repetition here.

The Medical Society of the County of Kings and the Long Island College Hospital are cooperating in a comprehensive plan, which grew out of the Practical Lecture Series—a course consisting of twenty clinical lectures and charts, specimens, and demonstrations on patients, given in the spring and fall on Fridays at 5 o'clock. Every physician in Brooklyn receives an announcement the day before the lecture. This is not the stereotyped medical meeting; papers are not read; discussion in the usual sense is not permitted, and only tried teachers lecture on subjects selected by a committee. Lectures start promptly at 5 o'clock, and end at 6 exactly, so as not to interfere with the day's work or with evening office hours. More than a hundred lectures have been given; yet the series is as popular as ever, the auditorium always being crowded to capacity, with an audience that changes from week to week.

Bedside teaching was the natural corollary of the lecture series, for small groups could not be taken care of in any other way, nor could the lessons and inspiration of the lecture series be better translated into terms of general practice. The college had already had some success with graduate courses, so a plan was devised by which a joint committee, in which the society and the college had equal representation, provided new short courses at a convenient hour each week for groups of eight registrants; these courses have been given at the college and in twelve great hospitals of Brooklyn not otherwise affiliated with the college. A wide field has been covered, and the effort made in every case to place the student in direct contact with the patient in the wards. Every physician on Long Island receives a monthly announcement.

Some intensive courses given over a long period on diseases of the heart, stomach and intestines, fractures, anesthesia and anatomy have been successful. We have repeatedly stated that we seek not to make specialists but to improve the standard of practice in our own community. Courses in gynecologic and obstetric disease and in ophthalmic surgery have been taken by specialists, and a course in measurements of the visual fields has been taken by almost every ophthalmologist in Brooklyn.

For convenience, there have been two places for registration: the office of the dean of the college and the office of the librarian of the county society. Registrants must apply in person, fill out an application card, and pay a small registration fee. There is a larger fee for the intensive courses and none at all for the practical lecture series.

The library of the Medical Society of the County of Kings has been of great help in the consummation of our plans. The magnificent collection of more than a hundred thousand volumes and more than a thousand current periodicals has trebled in usefulness since the beginning of the movement. Any number of books or journals may be taken home by members, while the library is open to all from 10 to 6 daily, and on two evenings a week.

Every year has shown a steady, healthy growth, and, in its fifth year of graduate courses, without change of any kind in control or organization, graduate education in Brooklyn is a source of mutual satisfaction to the society and the college, and is well and firmly established.

Close affiliation of an active county medical society and a medical school seems to be a sound and ideal solution of the problem. The teaching experience and equipment of the college is of course invaluable; yet there may be a large amount of clinical material not under college control in hospitals in which there may be many willing and well qualified teachers. If we assume that all the clinical material of a community should be used for student teaching, both graduate and undergraduate, some one must be able to bring about a proper correlation of all the available teaching units. The county society may well take the initiative here, because organized medicine is a civic force not to be disregarded.

Medicine is the most scholarly, the most honorable of the professions. Organized medicine speaks for us—for every one of us, for those who teach medicine and those who practice it. The medical school is simply the machinery that starts men in practice. Physicians are not made in four years, and the medical schools, in giving earnest thought to the problem of education, which begins the moment the student is graduated, have a problem that is possibly ours more than theirs, for without the help of organized medicine, progress will not be made. The army in the field contains, it is true, many who have been concerned for years not with the art but with the business of medicine. They dishonor us. With them we have nothing in common. Most of us are proud to be numbered among those who practice medicine with clean heart and purpose. That is organized medicine, and the medical school must welcome an alliance with us.

Medical education is not a purely medical problem. Every one has a right to participate in the dividends of modern medicine; consequently, the public looks to us. The steadily increasing group consciousness of organized medicine, and its growing desire to assume leadership in the solution of the great problems of public health, fix on us a very definite responsibility. In the continuous education of the practicing physician we see the greatest single contribution that organized medicine can make, and responsibility rests not on the medical college but on us.

1. Gordon, C. A.: The Brooklyn Extension Plan, J. A. M. A. **81**: 1629 (Nov. 10) 1923.

SUMMARY

1. The Medical Society of the State of New York is carrying stimulation, encouragement and some form of graduate education to those who are unable to leave their homes. This is at the very core of our movement.

2. Kings County for five years has maintained an alliance with a medical school in the conduct of a form of graduate education which has been very satisfactory.

3. Queens County, without a medical school, has organized its hospitals for group teaching in the same way as Kings.

4. We do not expect to train specialists, but we do hope to raise the local standards of practice.

5. Comprehensive courses in the laboratory sciences are not included in our plans, because we believe that the majority of disease conditions yield to clinical diagnosis, which is still the most important factor in the practice of medicine.

6. We believe that our plan could be carried out in any community in which there are hospitals and men willing and able to teach.

7. The best results will come from an alliance with the medical schools available.

8. Responsibility for graduate education rests on organized medicine.

256 Jefferson Avenue.

THE TEACHING VALUE OF POSTGRADUATE CLINICS AND CLINICAL PROGRAMS *

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The promotion of postgraduate medical study through the medium of clinics or clinical conferences, away from medical teaching institutes, is an expression of the missionary idea, and a form of the extension study course so generally adopted in other fields of educational work.

The purpose is to bring to the graduate in medicine who is in active practice the results of medical research and progress without necessitating attendance at some established graduate medical school.

The successful accomplishment of the educational purpose depends on several factors. Every physician should have the teaching instinct, but not every one is born to the art. Much of the teaching value derived from a clinical conference depends on the ability of the clinician to draw out of the subject or patient a comprehensive and instructive lesson. To educate—from educo—means to lead or draw out, not to stuff.

The teacher naturally appears at his best when every facility is at hand for presenting his subject in the most complete manner. For the clinical teacher, the presence of a patient representing the disease condition under discussion produces the proper stimulus and calls for the best that is in him. His manner of approach and contact with the patient, his method of obtaining the clinical history, the technic of examination, the logic of diagnosis and prognosis, with suggestions for treatment, each teaches a lesson far better than is possible by any didactic presentation.

A clinician in responding to a program invitation may choose the clinical demonstration in preference to the prepared paper, thinking it is the easier task, but such is not the case, for a discussion as outlined above, if well done, approaches the apogee of the art, and calls for talents of a high order.

The dry clinic or clinical conference has been adopted by local, or county medical organizations, district and state medical societies because of its postgraduate teaching value, and in a few instances medical schools have taken the initiative in the matter.

LOCAL CLINICS

The Michigan State Medical Society may be regarded as a pioneer in making postgraduate education available for its members. Through the courtesy of the secretary, Dr. F. C. Warnshuis, some of the interesting details of the plan have been obtained.

As far back as ten years ago, organized teams were sent to various county societies to give an afternoon and evening program of postgraduate instruction. This was soon extended by the formation of postgraduate conferences conducted by councilor districts. During the past year thirty such conferences have been conducted in the fourteen councilor districts of the state. These conferences average a day in length, commencing at 9 o'clock in the morning and extending through until evening. The subjects presented are limited to half hour periods each, and are discussed by physicians recognized for their special training and ability. In these conferences special emphasis is given to methods of examination and diagnosis, and to the salient features of therapy.

This plan has been enthusiastically received by the members, and in order to bring it still closer to the physician, the district conferences have been superseded by county society meetings, in which postgraduate clinics or discussions feature the program.

In addition, postgraduate clinics have been held at some of the leading hospitals in Michigan, and the State University Hospital at Ann Arbor. At the three days' session held at the University Hospital last November, 300 physicians were registered. Encouraged by the successful development of this plan, the state society is now promoting the organization of an all year postgraduate school at the university, to which members may come for a day, a week, a month, or a six months' course, and pursue a definite line of postgraduate study with broken attendance, but still in the period of a year complete a definite course of instruction and study.

The accomplishment of this unique plan will be watched with interest by all who are concerned with the problem of making the results of medical progress readily available to the practicing physician.

The Michigan State Society evidently has a high conception of its obligation to its members in the endeavor to keep them medically fit, so as to render the best service and advice to the people of the state. The Michigan idea has attracted the favorable attention of other state medical societies, and efforts are now being made in several states to inaugurate a similar plan. Alumni clinics conducted by state university and other medical schools are likewise giving a distinct teaching service.

The small group clinic has been specially promoted by state tuberculosis associations and state organizations for the study and prevention of heart disease. Aside from stimulating the interest of local physicians in a survey and closer study of tuberculosis and heart disease in the community, these clinics have greatly

* Read before the Annual Congress on Medical Education, Medical Licensure and Hospitals, Chicago, Feb. 15, 1927.

advanced the campaign of public education regarding these two prevalent diseases and the conservation of health in general.

In order to give the postgraduate clinic plan a wider audience, clinical programs are being adopted by state societies and other larger medical associations. For example, the last two annual sessions of the State Medical Society of Wisconsin have been arranged as follows: The meeting comprises three days, and each half day session is devoted to some special theme. During the last hour a dry clinic is held, representing the disease condition under discussion by the previous speakers. In this way six dry clinics are presented during the course of the annual meeting. The secretary, Mr. J. G. Crownhart, states that this plan has met with the hearty approval of the membership and will be continued. The Wisconsin State Society also sponsors at least one clinical conference in each councilor district during the year.

The Iowa State Medical Society, at its annual session in 1926, arranged a clinical program for the three days' meeting. Members of the society did not participate in the program. Nine leading clinicians were invited as guests, three for each day of the session, each to conduct a one hour clinic in the forenoon, and a discussion on a subject related to his special field in the afternoon. Carefully selected patients and other details were properly prepared by the physicians of Des Moines, where the meeting was held, and this first clinical session was voted a distinct success.

Within recent years other state societies and the larger district medical associations of the country have taken on entire or in part some form of clinical program. The program of the 1926 session of the Southern Medical Association was largely of a clinical nature. The Pacific Northwest Medical Society for a number of years has presented an excellent clinic program, usually held during the early summer in Seattle.

On a larger scale is the Kansas City Fall Clinical Conference, which is held every year during the early part of October. The average attendance is a thousand or more. The conference is of great interest to the profession of the Southwest, and there is usually a great deal of enthusiasm in regard to it.

NATIONAL CLINICS

From the standpoint of educational merit, the diagnostic clinics held in connection with each annual session of the American Medical Association are deserving of special mention. These clinics, in connection with the illustrated lectures, moving picture demonstrations and scientific exhibits of the various phases of medical investigation, all properly coordinated, constitute an opportunity for one week of intensive postgraduate study such as is not equaled anywhere at the present time.

One of the most interesting developments within recent years is the magnitude of the clinical program presented by the Tri-State Medical Association, or, as it is now styled, the Interstate Post-Graduate Medical Assembly of North America. When organized about ten years ago, it comprised only the states of Iowa, Illinois and Wisconsin. The first meeting was held in Freeport, Ill., in 1916, with an attendance of 300. Subsequent meetings were held at Dubuque, Madison, Rockford, Waterloo, Milwaukee (twice), Peoria, Des Moines, St. Paul and Cleveland. This year's assembly will be held in Kansas City, Mo. About 1923, the society was enlarged so as to include by affiliation most of the states in the union. The attendance has gradually increased each year. It was 1,600 at the Des Moines assembly in 1923, and 2,400 at St. Paul in 1924, while 3,000 registered at the Milwaukee meeting in 1925, where amplifiers were used for the first time. The peak was reached at the Cleveland assembly, at which there was an attendance of 5,000. The success of these large clinical gatherings is due to the remarkable energy and administrative ability of the director, Dr. William B. Peck.

The earlier meetings continued through three days, which have been increased to five day sessions, and they are not eight hour days. The strenuous pace begins at 7 o'clock in the morning and continues to 11 o'clock at night, with only one hour intermissions at 12 and 6 o'clock.

Through the excellent cooperation of the local profession, patients are properly prepared for each clinical demonstration. The variety and number of patients presented at some of the clinics is unusual. For example, there has been a clinic on diabetes with fifty patients on the stage representing every phase of the disease; a clinic on fractures with eighteen illustrative cases; one on tumors of the brain and spinal cord with a dozen patients for demonstration; a clinic on endocrinology with ten patients, and one on substernal goiters with six typical cases. Clinics are also arranged in which a group of patients are presented illustrating a certain clinical symptom, such as cyanosis, anemia, gastric achlorhydria and hypochlorhydria, and hematuria.

The assemblies have been a further innovation in the large number of medical teachers, clinicians and research workers participating in the program. At the Cleveland meeting last October, faculty members from thirty-two medical schools in Canada and the United States took part, and the twenty foreign guests included well known teachers and clinicians from Belfast, Dublin, Glasgow, Edinburgh, Bristol, Manchester, London, Copenhagen, Stockholm, Brussels, Munich, Paris, Budapest, Rome, Madrid and Buenos Aires. The opportunity to see and hear such a large number of prominent medical men is undoubtedly one of the unique attractions of these assemblies.

The unusual increase in attendance, the expansion of the program, and particularly the need of using an amplifier, have had the tendency to lessen the teaching value of the clinical demonstrations. The very bigness of the thing may prove to be a drawback. As congresses and assemblies of this character develop to a certain size, they distinctly lose some of the instructive features peculiar to the small group clinics.

The interest manifested seems to indicate that this association nevertheless has a definite field of endeavor, and in a large measure has accomplished the objective of its organization. Its main purpose is to give to the general practitioner an intensive review each year of postgraduate medical education, as presented by eminent teachers, clinicians and investigators in their particular field of work.

SUMMARY

The closer contact with medical leadership is stimulating and encouraging for further individual study. Furthermore, it promotes a closer interchange of medical research and progress, and establishes better professional relations with colleagues in this and other lands, of mutual benefit to all concerned.

It should be emphasized that whatever type the clinical conference or demonstration may assume, its educational value should be appreciated; and medical schools will do well to recognize the opportunity that is offered in this field of extension work. This is equally one of the important functions of organized medicine as well as of institutions concerned with postgraduate medical education.

Bankers Trust Building.

MEDICAL EDUCATION FOR THE GENERAL PRACTITIONER *

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In the autumn of life one perhaps may be privileged to become reminiscent. A brief review of my own medical college experiences and lifelong attempts to improve my knowledge by visits to the great medical clinics of the world may aid in an interpretation of my personal views of present-day methods of medical education.

In 1880 after high school, two years in Niles Academy, and one year in a private school for languages and sciences, I entered the medical department of the University of Michigan. I graduated in 1883, when I was 21. The year 1880 marked the commencement at the University of Michigan of a medical course of three years, with nine months to the school year. The three-year course was an innovation which at that time had been adopted by but few medical schools in this country. Most of the schools still gave a two-year course of five or six months each year, with the teaching the second year largely a repetition of that of the first year. In many of these schools the educational facilities were only meager. The professors depended more or less on private practice for their livelihood, and the teaching was essentially gratuitous. Yet each of these medical schools had on its faculty one or two clinical men of strong leadership, and much as we may deplore the educational methods in use at that time, one fact stands out with startling clearness: Every teacher was a practitioner of medicine and every student was taught to practice medicine.

The proprietary medical schools had to go, and there was small regret at their going. The medical schools on a more substantial basis gradually developed better methods of teaching and increased the cultural requirements for entrance. The pendulum of medical education swung from the time when medical practitioners taught clinical medicine to the present, when the full-time professional educator is largely in control of medical education.

It has been said, and I believe justly, that one should go to the educator for information but not for advice. This is especially true in medical education. The actual practice of medicine must be taught by example as well as by precept.

The chief difference that I note between the medical schools of my time and the medical schools of today is that the teachers in the older schools were proud to practice medicine. They counted wisdom, that is, the application of knowledge, as being of greater importance than the mere accumulation of knowledge. Many men of wide knowledge have little wisdom. Many men of great wisdom have little knowledge, but derive efficiency from the fine use which they make of what they know.

Today one may say truthfully that medical researches designed to relieve generations yet unborn are looked on as being almost holy in conception, whereas the relief of people who are now miserable and suffering is too often looked on as rather sordid and commercial.

I am reminded of the old Persian proverb: "He who learns and learns yet does not what he knows, is one who plows and plows yet never sows."

In the old-time medical schools, students were inspired by the example of the heads of the clinical departments of medicine and surgery to learn to practice medicine for the relief they might give to suffering humanity.

At the University of Michigan in my day there were conducted each week, in the old amphitheater of the small university hospital, two short clinics in medicine and surgery. There all the classes, including the freshman, were gathered together. I can visualize my freshman class sitting on the back seats, too far away to see the technic of the operation, but inspired by the fact that operations were going on; by seeing the assistants as they performed their duties; by seeing the members of the senior class called down to be quizzed on diagnosis and permitted to take some minor part in the operations. Month by month and year by year we were steadily educated in what we were expected to do; we were being taught to practice medicine.

The teaching of medicine in the years from 1880 to 1883 was simple; there was not so much known as now. Today we are suffering from too much knowledge too widely diffused. We try to teach our medical students something of all the medical sciences. Without intending to criticize unkindly, I believe that we devote too much effort to driving home detailed information and too little to the development of perspective. None of us here would pretend to a complete knowledge of even one subject, and yet we work our medical students seven days in the week to give them a smattering of everything. Many of them, in trying to achieve the impossible, are burned out mentally before they finish school. The detailed information we try so hard to give the medical student all can be obtained from books. We should teach him how to think and where to look for information, so that commencement will be what the term implies, the beginning of the study of medicine, rather than a consummation for medical practice.

I am glad to see that schools such as Harvard and University of Pennsylvania and other medical schools have cut from the curriculum some hundreds of hours of required study, that the students may have a chance to think and to acquire wisdom, instead of continuously packing in miscellaneous medical information.

Inequality in the standards of professors in our medical schools has an effect on medical education. Certain professors are rigorous in their examinations, whereas others apparently are more considerate of the student, more in sympathy with his hard lot. Such differences unbalance the curriculum. The men who have the reputation of "plucking" students get more time from the students, regardless of the importance of the subjects they teach, than those who are apparently more lenient. The result, in many instances, is that essential subjects are neglected to emphasize the less essential.

There is a tendency to make the profession of medicine an aristocracy. The cost of medical education, the number of years before men can be self-supporting, the age at which students graduate, averaging around 27

* Read before the Annual Congress on Medical Education, Medical Licensure and Hospitals, Chicago, Feb. 14, 1927.

years, is driving many bright men into other professions. Yet investigation has shown that the student who graduates before he is 25 is of greater average professional worth at the end of fifteen years than the one who graduates after 25, and I am told that those who rank in the second half in scholastic attainments at a medical college are on an average of as great professional value as the first half at the end of fifteen years.

Most of the men I know in the practice of medicine who have reputations justly earned have come from the farm or small community; they have been poor. Many of them peddled papers and did other work to help put themselves through medical school.

Sometimes as I look over the requirements of our premedical and medical courses and talk with the professors I get a rather uncomfortable feeling that a possible object of some of the requirements, especially the so-called honor points, of the premedical course is to bring the classes down to the comparatively small number that can be conveniently taught. And yet we have great buildings, with expensive equipment, working comparatively few hours a day.

The state is interested in the medical schools. For each dollar that is paid by the medical student, the state directly or through endowment funds pays from two to three dollars or more. This expense on the people of the nation is borne willingly in the hope of securing competent help for the care of the sick.

If a student is unnecessarily delayed in his medical course for a year by lack of credits, he on his part and the state on its part are put to undue expense. And when one analyzes the reason for refusing this student admission to the medical school it is sometimes seen that he would have been permitted to enter other departments of the university and that his lack of credits was too often in subjects that had really little to do with the practice of medicine.

After the war there were at the University of Edinburgh more than 2,000 medical students; on my visit in 1923, there were 1,700; and I think that the average today is from 1,000 to 1,200. Are there better clinical practitioners of medicine than the men from the University of Edinburgh? If so, I do not know them. At Guy's Hospital the medical school is a part of the hospital, and the clinical teaching goes on with the medical studies in the fundamental branches.

It is therefore most gratifying to me to find that my Alma Mater, along with many other good medical schools, is having the members of the senior medical class enter the hospital for their entire training during their last year. I hope the time will come when this clinical training will also take in the junior class, and also that the premedical course and the first two years of the medical course will be more closely related to the basic studies of the final two years.

In so vast a field as medicine I do not feel competent to say just what should be taught the student today that he may become a good general practitioner, but I do believe that the function of the medical school is to turn out general practitioners, and that the man who desires to take up a specialty should take it up as a graduate subject. The requirements for general practice must change year by year as knowledge advances and new conditions are made manifest, or as old diseases are modified by environment, and changes in the social life of the people take place.

When my brother and I entered practice the whole science and art of surgery was rapidly changing. We secured our knowledge largely from experience. By turns we eagerly visited every noted clinic in the civilized world in search of knowledge and we also gained great inspiration thereby. When we heard of a man who appeared to be doing something unusual we went to see him; sometimes he was in Europe, sometimes he was in a town near us. There is no excuse today for the surgeon to learn on the patient. There is sufficient opportunity for the man who wishes to specialize to be trained by men who are already trained. The so-called general surgeon does not exist. Many men have a smattering of many types of surgery, but they would not be permitted to perform all types of operations on me or on members of my family, except in an emergency.

The American College of Surgeons was founded on the belief that knowledge and wisdom are equally essential. A man may have much knowledge, but if he cannot put it into practice he cannot become a fellow of the American College of Surgeons. Nor can he, immediately on passing a series of examinations and completing his hospital apprenticeship, enter the college. It is not until he has shown, after seven or eight years of practice, that he is maintaining high standards in surgery that he is admitted. The college has sought to insure that there shall be enough surgeons competent to care for the needs of all the people, and has let such societies as the American Surgical Association limit membership to those who are engaged in surgical teaching, as the possible aristocracy of the profession.

The practice of medicine is changing, however, and the wealth of specialized knowledge available makes the independent general practitioner of the old times obsolete. Medical cooperation is essential if the people are to have the benefit of modern medical knowledge. Unfortunately, group medicine has caught the eye of the profession too much on the financial side to the subordination of the professional side. Group medicine can be practiced, however, by independent practitioners, in proper financial relations with one another. In fact, every general practitioner today is practicing group medicine. He is getting his roentgen-ray examinations through one man, his laboratory reports from another, and examinations relative to contagious diseases through the state laboratories. Such a group relationship is as much an entity as though it were formally organized. Community clinics, like clubs, can be readily established and in various places have been organized. For instance, a group of medical men may agree to do the charity work for the community at a fair price, just as the county attorney gets a fair price for his work. The senior men may delegate the work to some of the younger men, but furnish the consulting skill and accept responsibility. The funds beyond those justly paid, as fees to the men who take active part in the work, go to the support of the clinic. In this way patients of all classes receive the same skilled service and the profession is not pauperized.

Just as conditions of medical practice have changed, so have those of nursing service, and of hospitalization. The expense of illness in the home and the attendant unavoidable disruption of home economics have created a situation that is being met by wide hospitalization. Today every community with civic pride is establishing a community hospital where the sick can be cared for better, and at less expense, than at home.

I do not advocate a letting down of standards in our medical schools, but I am convinced that one year of time could be saved in our grammar schools and a year

could be saved in our medical schools by the four-quarter system. That children in the growing age have three months' vacation in the summer is no reason that young men and women at the height of their physical vigor, in a world on a twelve-months' working basis, should have three months' vacation. Finally, the function of the medical schools is to turn out efficient general practitioners. To train specialists and research workers requires a long apprenticeship in graduate instruction under competent teachers.

THE TEACHING OF CLINICAL WORK TO THE UNDERGRADUATE*

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Mark Twain once said that everybody talks a lot about the weather but nobody seems to do anything about it. Medical education in the United States is like the weather in that everybody talks about it, but it is unlike it in that everybody seems to do something about it. It is a matter of surprise that with so much tinkering as has occurred in recent years we still have anything left that is capable of motion. This constant desire to change is, of course, indicative of dissatisfaction with present methods; and dissatisfaction may lead either to better things or to worse. Presumably, the dissatisfaction with the methods of education arises from a dissatisfaction with the finished product, the medical graduate. When, however, one analyzes the complaint, he is struck by the feeling that perhaps an impossible goal has been set up, one to which nobody could hope to attain. From a philosophical standpoint a goal impossible of attainment may be the only desirable kind, but failures to reach it should not lead to discouragement or dissatisfaction.

What is this goal that has been set up? If one may judge from numerous papers and addresses, the goal toward which most of our medical schools strive is some slight variation of the idea that every graduate shall be "competent to engage in general practice." Often at the same meetings in which such a goal is proclaimed, we are also told by others that few or none of the young medical graduates are going into general practice and that the public is suffering from a lack of general practitioners. The innocent bystander might well ask what the object is of trying to train men to do something that they are unwilling to do. If adjustments in methods of education are to be made, therefore, should they be of a kind which will vainly seek to compel intelligent young men in larger numbers to engage in an occupation which is apparently distasteful to them, or shall these adjustments take other directions?

Is it possible, after all, for one to engage in general practice? Are there today really any general practitioners, any who are qualified to take care of disease in all its phases? If there are, then the profession of medicine has the distinction of being the only occupation of the present time in which such a claim can be made. This is an age of specialization. Labor is highly specialized, as everybody who owns an automobile knows. All the professions are highly specialized. Weiskotten's [1] study indicates that only about 25 per cent of the recent graduates of the class A medical schools are engaged in general practice, as the term is usually understood, although about 35 per cent more began in general practice, expecting to specialize later. But a generation ago, probably nearly all the graduates of the medical schools of this country engaged in general practice. Certainly within the memory of all of us there has apparently been a marked decline in the number of so-called general practitioners.

This decline has caused much comment and many explanations have been given, all of which are doubtless true in some measure. Some of the comment has even been bitter, and the medical schools have come in for their share of adverse criticism in not training men in such a way as almost to compel them to go into general practice. There is one possible explanation, however, which has received only scant attention. I refer to the feeling of incompetence on the part of the practitioner. Every honest man prefers to do what he knows he can do best. Every honest man also who has been in a good modern medical school knows that with the vast amount of medical knowledge at hand today it is impossible for any individual to be expert in all the phases of the diagnosis and treatment of disease. How often must the conscientious general practitioner become dissatisfied with himself because of his self-recognized failure to diagnose this case correctly or to treat that one properly. The fact also that the public is becoming aware that, for example, chronic indigestion demands a more accurate diagnosis than can be made by a few questions and a casual examination, and something more effective than pills for its treatment, tends to increase the feeling of incompetence on the part of the conscientious general practitioner. In our glorification of the old time general practitioner do we not bring up a picture of a kindly, benevolent old man who perhaps brought us into the world, saved father in a case of pneumonia, and cured little brother of the measles? Do we not forget the many mothers who died of so-called malaria during the puerperium; the fact that his treatment of father's pneumonia did not affect the disease, as shown by the mortality rate for pneumonia, which has scarcely varied from decade to decade during the last fifty years regardless of the many modifications of treatment, and that little brother's measles was probably not in the least affected by the varied assortment of medicines given to him? Do we not also forget the young men with the chronic coughs who were treated with cough mixtures until death from tuberculosis closed the scene; the women with lumps in their breasts who were watched until the cancers developed into inoperable conditions, and the cases of osteomyelitis treated as rheumatism? I am not trying to belittle the splendid self-sacrificing work which the general practitioner has done. All honor to him! Instead, I am merely trying to show both sides of the picture as I have seen it, because the assumption is usually made that with the decline in numbers of the general practitioners the public has suffered.

In contrast, we may fairly ask what the accomplishments have been of these newer products of our medical schools, so many of whom desire to shun the entrance into general practice. Has the public really suffered from the great change that has affected the medical profession of this country in the last twenty-five years, the period that has marked the decline of the general practitioner and the ascent of the specialist? Individual communities here and there may be more poorly served than formerly, but several magnificent accomplishments

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* From the Department of Surgery, Washington University School of Medicine, and Barnes Hospital.
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1. Weiskotten, H. G.: Present Tendencies in Medical Education, Bull. A. Am. M. Coll. 2:29 (Jan.) 1927.

have been recorded. The average duration of life throughout the country is said to have increased by twelve years since 1900, despite the enormous annual number of deaths from injury; the mortality from tuberculosis has been reduced by one half; yellow fever has been practically put out of existence; typhoid, a scourge thirty years ago, has now become a rare disease, so rare that it is difficult to obtain cases to show to medical students, and a stupendous amount of new knowledge of disease has been created, more perhaps than in any other preceding quarter century. Do these accomplishments warrant the assumption that the general public has suffered by the decline in the number of general practitioners? Are they not rather truly marvelous indications that perhaps after all the public is faring better than it ever has before in the history of the world?

But even if we should decry this radical change which has come over the medical profession, it seems doubtful to me that we can stop its progress. The intelligent public expects and demands specialization in medical practice just as it does in labor, in commerce, in finance, in education and in everything else. Specialization is one of the characteristics of the age in which we are living. It seems to me that as medical knowledge and technical skill become more advanced, specialization is bound to increase rather than to diminish.

The significance of the points which I have tried to develop above is that medical educators must face the realization that it should not longer be the chief object of the medical schools to turn out general practitioners resembling those of twenty-five or fifty years ago. At that time it was possible for an individual to have a fairly complete grasp of the current medical knowledge and to be reasonably adept in its various branches. Now, however, it is hopelessly impossible; and in the future it will be even less possible.

Obviously, then, since we cannot expect that after four years' attendance in a medical school the graduate can be adept in all the various aspects of clinical medicine, we should abandon any idea that we can make him so. It would seem also to follow from such a conclusion that it would be unwise to require of all students the abortive courses commonly required by state boards in those branches which we ordinarily consider as specialties, such as eye, ear, nose and throat work, and dermatology. Instead, it would seem wiser to spend the time chiefly on those fundamentals which are the basis of all clinical medicine and to allow more time than is generally given to elective courses, to freedom for work in the library, for independent observation and for research. By fundamentals I mean not only the sciences of anatomy, physiology, chemistry and pathology but also the essentials of clinical science. By the latter I mean training in the power of observation, in the taking of patients' histories, in the use of medical literature, in methods of examination and in the usual therapeutic procedures for the more common conditions. Training in methods of examination of patients should be intensive in all clinical work, and it should include all methods of examination that are useful. Every student should become reasonably adept in the use of the older, well established methods of physical diagnosis, and in addition he should be sufficiently familiar with the interpretation of roentgen-ray and other laboratory procedures to realize their values and their limitations. Here the specialties can give much, for familiarity with such instruments as the ophthalmoscope, the otoscope, the laryngeal mirror, the proctoscope and the vaginal speculum will often be found valuable to any one engaged in any sort of clinical work.

The student of medicine, like the student of other professions, should be taught how to find out about the experiences of others. For this reason he should be familiar with good medical literature and should know how to use a library. Above all he should be regarded as a rational animal and be taught to think so far as that is possible. Too often, I fear, in the work of the medical school the emphasis is placed on memory. Sir James Mackenzie expressed this tendency admirably in the following words:[2]

> There are two very distinct qualities of the human mind: memory and the power of reasoning. The earliest to be developed is that of memorizing, and this can be cultivated with great ease. The power of reasoning is quite different, although, no doubt, memory takes a part. When we look at a great number of students, we discover that this power of memory is greatly developed in a few, and that all our educational methods are devoted to its cultivation. Examinations are specially contrived for the purpose of discriminating those with the best memories, and to them all the honors and prizes are given.
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> The individuals who, on the contrary, possess more of the power of reasoning than their fellows receive no consideration. There are minds which have a difficulty in remembering isolated facts; but if these facts are related in some consecutive manner, they can not only remember them but also appreciate their bearing on one another. But this type of mind is slow in acquiring knowledge, and in our present-day methods of education less and less encouragement is given to this type of student. His peculiar powers are never developed, and their presence is never suspected.
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> The outcome of the teaching of today is to hail the student with superior powers of memorizing as the brilliant student, and the one with the great future. The consequence is that his path from the outset is made easy for him. Bursaries and scholarships fall to his share, and before he has acquired any experience he is appointed to a teaching post. In the absence of any knowledge acquired from the results of his own observations, he is forced to teach that which he was himself taught, and, as he cannot discriminate between truth and superstition, he hands both on to his students. As years pass he comes to believe what he has taught is true and may even grow impervious to new ideas which are contrary to the beliefs he has been expounding.

The methods of the schoolmaster do not have a place in the teaching of clinical medicine in the modern medical school. Medical students should not be so much taught as they should be given opportunities to learn. Much that is unwise and of little value has been removed from the curriculum. But in order to satisfy state board requirements there is perhaps still too much remaining that smacks of the tutorial didactic methods. The time will doubtless come when it will not be considered disgraceful for a medical school to have a considerable number of its graduates fail in state board examinations, unless the character of these examinations is greatly changed. For most of these are after all only tests of feats of memory attempting to cover the whole field of medicine; they do not indicate a man's fitness to practice medicine.

In spite, however, of the difficulty in giving a sound training in the fundamentals during four years' time, there is, as everybody knows, a constant bombardment of the faculties of the medical schools to include more and more subjects in the required curriculum. We are told that we do not teach enough anatomy, enough pathology or enough chemistry. We are urged to devote more attention to fractures, to physiotherapy, to

2. Wilson, R. M.: The Beloved Physician, Sir James Mackenzie, New York, the Macmillan Company, 1926, p. 24.

anesthesia, to radiotherapy, to medical history, to public health and preventive medicine, to medical jurisprudence, to stomatology, to psychiatry, to military medicine, to the social aspects of medicine, venereal disease, and so on, ad infinitum. As time goes on and the knowledge and importance of these various subjects grow, inevitably the demands will become more insistent to make the undergraduates spend more time on them. Unless, however, the time spent in undergraduate work is indefinitely lengthened, it will be necessary still to reserve the undergraduate course for the training in the essentials such as I have discussed. The sooner we realize that the majority of our students are not going to try to become general practitioners in the sense of a generation ago, the easier it will be to check some of the absurdities that are now occurring in medical education.

We shall, however, perhaps always need practitioners who can care intelligently for the less dangerous common ailments of mankind, including some of the minor surgical conditions. These men will not be general practitioners in the sense of a generation ago, but they will act perhaps more in the capacity of distributors of patients among those who are better qualified to diagnose and treat the more complicated conditions. For example, such a practitioner does not need to have the ability to make an exact differential diagnosis of every acute intra-abdominal lesion. All that he needs to know is how to recognize that an acute intra-abdominal lesion is present and that a surgeon should see the patient. Also, it is not necessary that he should be able to make an accurate, differential diagnosis in a case of chronic indigestion but rather that he should know where to get help.

If we are willing to admit that the change toward some degree of specialization is inevitable, our next consideration is how best to meet the problem as it affects education. Specialists in clinical practice obviously cannot be trained during the four years of undergraduate work. There are, of course, dangers inherent in specialization just as there are in general practice, and these dangers are of practically the same kind; namely, a lack of sufficient knowledge and skill to give the public the service that it has a right to expect. The training of the specialist can and does occur in either one of two ways, either with the supervision of experienced specialists or without that supervision. The specialist can be trained under supervision either as a resident in a hospital or as an assistant to some properly qualified expert. Training without supervision can and does occur as the result of a courageous trial of special procedures on the patients which a general practice brings until a reputation for special skill in these procedures brings more and more patients of that kind to the practitioner. Although in the majority of instances the former method would seem to have advantages over the latter, nevertheless certain outstanding characters, while engaged in general practice, have achieved immortal fame for the development of new knowledge and an expertness in the care of special conditions. A recent notable example of this latter class was Sir James Mackenzie, quoted above, who until his death was the great champion of general practice. Unfortunately, however, there are few men of the character and intellectual prowess of Sir James who can perform such feats as his while engaged in general practice. Also, it should be remembered that he belonged to a past generation, a very important point.

A hospital internship is now almost so universal in this country as a complement to the four years of undergraduate work that it would seem to be the logical starting point for the training of the specialist, and also for the training in many of the branches of medicine which are now trying to crowd their way into the undergraduate curriculum. I cannot see any reason, for example, for taking valuable time away from the essentials in order that each student may be compelled to conduct ten or twelve surgical anesthesias, a requirement now made by at least one state board. Many men who graduate now from our medical schools will never have an occasion to conduct an anesthesia later; but even if all of them should find it necessary to do so, an experience gained from conducting a trifling number would be of very little value. Training and practice in anesthesia, for those who desire it, should be reserved for the internship. More and more opportunities are arising for continuous residentship in hospitals beyond the period of internship. Most of these by paying small stipends, in addition to furnishing board and lodging, make it possible for young men to continue in their training without expense to themselves. More hospitals undoubtedly will realize the value of this kind of service to their institutions with the result that more and more of such positions will become available for intensive training of young men in the various special branches. Also for the proper performance of their share in this work it will be necessary for the teaching hospitals greatly to enlarge their facilities. The paltry number of beds in these hospitals will have to be greatly increased.

As regards the questions of how and of what part of clinical work should be taught to undergraduate medical students, I can make only certain generalizations. I am not prepared to expound any supposedly ideal curriculum which will correct all existing deficiencies. But I shall construct my remarks around the main thesis which I have been trying to develop in this paper; namely, that since it is now impossible to graduate men as efficient practitioners of general medicine after a course of four years, our work should consist chiefly of training in the essentials and should insure a minimum of wasted time for the student.

The central point around which the clinical education should be constructed must be the patient. There cannot be a substitute for the patient. Animals, charts or lantern slides can serve as useful adjuncts, but they can never serve as substitutes for actual contact with patients. In order to carry out a sufficiently intensive and permanent contact with patients, the English system of clinical clerkships and dresserships is the best scheme yet devised. It is the outstanding contribution of England to methods of medical education, and its use is an absolute necessity in any modern medical school. Clinical lectures, demonstrations, ward rounds, amphitheater clinics and outpatient work are all valuable if properly conducted, but they are of little significance in comparison with the student's daily contact with the same group of patients over a period of several weeks or months, in the capacity almost of attending physician or surgeon to his patients. If a student sees a patient on admission, when the diagnosis is of paramount importance, takes his history, makes an examination, watches him through the progress of the case, participates in the operation if there is one and sees him go on to recovery or death, and finally, if death occurs, sees and examines the organs disclosing their secrets at autopsy, he is stimulated to a degree beyond any that

comes from clinical demonstrations or formal clinics. During this time he has made certain special laboratory examinations, and he is able to see for himself the uses and limitations of these procedures. He has seen and talked with the patient's family; he has even been admitted into the family secrets, and he has learned much of how social and economic problems can affect disease. He has learned also much about the psychology of the sick, their fears, their worries and their attitudes toward physicians.

It has been usual to institute the ward clerkships in the fourth year; but in at least two medical schools, Yale and Vanderbilt, a change has been made whereby the ward work is given to the third year students, and the outpatient work to those of the fourth year. The same change will probably be carried out at Washington University in the near future. It has much to commend it. Patients in the wards usually represent the more obvious stages of disease, and there is present every possible facility for their examination and treatment. These are the patients, therefore, whose conditions are more easily understood by the beginner in clinical work. By contrast, the outpatients often present early and less obvious signs of disease, and their diagnostic and therapeutic problems are often more difficult; they also more nearly resemble the patients whom a young practitioner will see. These are the patients, therefore, who should be studied by the more advanced students.

To carry out the scheme of ward clerkships it is essential that an adequate number of patients be available. At the present time probably most of our teaching hospitals in this country have an insufficient number of beds that can be used for this purpose. Surgery needs more beds than medicine, because while the average medical case is almost equally instructive from day to day, the climax of the average surgical case is the operation. In the case of a hernia, for example, after the student has become familiar with the usual postoperative course, there is nothing of special interest for him during the convalescence from the operation. The operation also discloses the living pathologic condition with which the surgeon must familiarize himself, and a real knowledge of such conditions can come only through contact with a fairly large amount of material. For these reasons, then, and for the additional reason that our teaching hospitals should fulfil their important function of training expert surgeons, more ward beds are urgently needed. In fact, I should say that so far as the teaching of surgery in this country is concerned, the most pressing need is for more ward patients in the teaching hospitals. So far as I know, not a single one of our teaching hospitals is adequately equipped in this regard.

One or two anachronisms of surgical teaching suggest themselves. Probably the most useless survivor of a bygone age is the amphitheater operative surgical clinic. For an hour or two at a time students are herded together on the bleachers of an operating room while a surgeon down below discourses to them while carrying on an operation. The students occasionally catch fleeting glimpses of various organs; they may see a little blood now and then; they may even marvel at the gracefulness and apparent dexterity of the surgeon. But this is not learning surgery. Far more, it is not only a useless waste of time for the myopic students but it impresses them too much with the show aspects of surgery. They become impressed with the ease rather than with the difficulties of operative surgery. Worse yet, they come to disregard the fact that the long-winded discourses of the surgeon over an open wound are probably as dangerous to the patient as a dirty finger inserted into the wound. How much better for both student and patient it is for the student who is the "ward dresser" in the case to "scrub up" and actually to participate in the operation by holding a retractor. The day of the old time operative surgical clinic will not last much longer.

Another old relic of questionable value which still holds its ground in some of our medical schools is the required course of so-called operative surgery on the cadaver, during which students are taught to ligate arteries which they will probably never have to ligate in practice, to perform amputations, many of which are obsolete, under conditions that can never be made to resemble those in a living body, to repair imaginary hernias and to do other various kinds of stunts which are really exercises in anatomy and are not surgery at all. How much better it would be for most of the students to spend their time at something more useful. If some sort of a course in operative surgery must be given to satisfy the foolish requirements of boards of licensure, it should at least be conducted on living tissues, for which purpose anesthetized dogs are very useful.

Clinical surgery nowadays is much more than applied anatomy. It involves an accurate knowledge of pathology. The surgeon must at all times be prepared to make an immediate diagnosis of the lesion revealed by his incision. Frozen sections are often helpful to him, but in general he must depend on his ability to recognize accurately the gross pathologic anatomy disclosed to him. He does not have the advantages of the pathologist in being able to spend an indefinite amount of time in the study of the specimen before arriving at a diagnosis. The demand on the surgeon is insistent that he should arrive at a diagnosis immediately while the anesthetized patient lies before him with the incision open. The surgeon should also be a physiologist. More and more has it become apparent that an extensive knowledge of physiology is of the utmost importance to the clinical surgeon. The means of estimating the risk of an operation, and the questions of shock and of anesthesia, to mention a few, are all physiologic problems confronting the surgeon in his daily work.

The teaching of surgery, therefore, should be conducted in such a way as to show how it rests on the foundation of these other sciences. The student should be made to realize that just as the foundation grows in breadth and depth, so the superstructure of clinical surgery is permitted to grow and extend, but that without a solid foundation the superstructure will not stand but will fall. The eager and intelligent student, especially the one who desires to enter the specialty of surgery, will desire not only to familiarize himself with the foundations but also to add his share to the broadening and deepening of these foundations, or to the erection of a greater building on top of the foundations extended by others. Thus will come research, and it matters little whether the clinician shall carry out his research in the laboratory or in the ward. A fundamental distinction does not exist between so-called laboratory research and so-called clinical research. The two have the same result, the improvement of the welfare of humanity which is the sole purpose of the science and art of medicine.

If space permitted I should like to extend my remarks further into a more detailed consideration of what seem to me the desirable methods of conducting

clinical education for the undergraduate. But I have felt that probably it would be better to lay emphasis on the generalizations which I have tried to express. I have perhaps laid too much stress on surgery. But that has occurred only because I feel better qualified to speak on that subject than on its sister clinical divisions of medicine, obstetrics and pediatrics. By many my remarks on specialization will be regarded as too radical. But to me it seems clear that the tendency toward specialization is inevitable and progressive, and that it is the duty of medical educators to recognize this tendency and to make suitable adjustments in curriculums accordingly, rather than to make vain attempts to check it. The boards of licensure also must come to a realization that just as it is impossible for any one to acquire a knowledge of all the various aspects of medicine, so it is really an absurdity to conduct examinations based on methods of trying to determine one's fitness to practice medicine by attempting to find out what one knows about all its various phases and aspects.

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ALLERGIC MIGRAINE

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The suggestion that migraine is sometimes a phenomenon of protein sensitization is not new. The concurrence of this disease with asthma, urticaria and hay-fever either in one individual or in one family was first mentioned long ago. Many contributions have presented indirect evidence tending to substantiate this hypothesis, but I have not discovered any description of cases or of experimental work in which the cause was discovered, the disease relieved by the removal thereof and caused to return, following the reapplication of the etiologic factor. In allergy this roughly parallels Koch's postulates as applied to bacteriology, and is a necessary antecedent to acceptance of the theory.

As early as the first half of the ninteenth century migraine was grouped by some, particularly members of the French school, such as Trousseau, Bouchard and Dieulafoy, with asthma, eczema, epilepsy, gout and lithiasis, and these conditions together constituted the manifestations of the lithemic diathesis. Trousseau, seventy-five years ago, recognized an asthmatic diathesis in which he included, among other diseases, urticaria, eczema, hay-fever and periodic headache.

Neusser,[1] in 1892, reported a blood eosinophilia during migraine attacks. This was confirmed in 1921 by Gänsslen.[2] In 1922, VanLeeuwen and Zeydner[3] isolated from the blood of patients with asthma, urticaria, epilepsy and migraine a substance which was found to stimulate nonstriated muscles. This was not present in the blood of normal persons. The most characteristic recognizable phenomenon associated with experimental anaphylactic shock is smooth muscle spasm. Pagniez and his associates,[4] from 1919 to 1921, working on the assumption that migraine was an anaphylactic manifestation, treated patients at first with horse serum intravenously and later with peptone intravenously. They reported good results. Miller and Raulston,[5] continuing the peptone work in this country, treated migrainous patients with 5 per cent intravenous injections. Thirty-six per cent were much improved, 48 per cent moderately improved, and 16 per cent not benefited. Twenty-five patients were so treated. In the first group the patients remained free from attacks for two months or more, four being relieved for two months, two for three months, one for four months, one for six months and one for as long as nine months.

These authors point out several points of similarity between migraine and asthma. Besides the eosinophilia and the pressor substance mentioned, they stressed the periodicity of migraine, the refractory period that usually follows an attack, the frequent association of asthma and migraine in certain families, the coexistence of these diseases in one individual, the fact that migraine, like asthma, often disappears after an acute infection such as typhoid, and that both are usually favorably influenced by pregnancy. They mention the suggestion made by others that the placenta behaves perhaps like a foreign protein, keeping the mother in a state of desensitization.

Curtis-Brown[6] proposes a protein poison theory of migraine which he specifically describes as not associated with anaphylaxis. His idea is that no preliminary sensitization is necessary, but that poisoning with proteins results from an inadequate metabolism, usually hereditary, which affects particularly the ability to metabolize nitrogenous foods. His distinction appears to be chiefly in words, and he does not produce experimental evidence supporting his hypothesis. He insists that skin tests are unreliable, and starts his patient out on general protein restrictions with a very low protein diet, such as is customarily used in a severe nephritis. To this he makes occasional additions, thus discovering what foods may cause trouble. From his study he incriminates particularly meat extracts, fruit, eggs, sweetbreads, mushrooms, tomatoes and chocolate.

Sherwood-Dunn,[7] in a contribution on the cause of chronic diseases, mentions migraine as being probably anaphylactic, but he likewise does not present clinical or experimental work in substantiation, and mentions migraine only as one of a list of twenty-five or more surprisingly diverse diseases which he feels may be associated with anaphylaxis. In this list we find such unrelated and indefinite conditions as anemia, rheumatism, gout, obesity, acne, constipation, neurasthenia, emphysema, insomnia, dyspepsia, catarrh, dysmenorrhea, leukorrhea and troubles of the menopause.

Rohrer[8] compares migraine with anaphylactic shock, in which there are sweating, nausea, vomiting, excited intestinal activity and occasional hemorrhages. He points out that anaphylaxis is inherited only through the mother, and that there is a great preponderance of mother heredity in migraine.

Some association of migraine with the patient's diet has been noted by many, and not a few have observed that individual articles of food will bring on attacks. Pagniez refers to a patient whose migraine consistently followed the eating of chocolate. Brown[9] has made a most careful study of the relationship between headaches and the diet. He finds that in some cases headaches follow the taking of a carbohydrate moiety in excess of the individual tolerance. True, migrainous

1. Neusser, E.: Wien. klin. Wchnschr. **5**: 41, 1892.
2. Gänsslen, M.: Med. Klin. **17**: 1202 (Oct. 2) 1921.
3. VanLeeuwen and Zeydner: Brit. J. Exper. Path. **3**: 282 (Dec.) 1922.
4. Pagniez, P.; Vallery-Radot, P., and Nast, A.: Presse méd. **27**: 172 (April 3) 1919. Pagniez, P., and Nast, A.: Ibid. **28**: 253 (April 28) 1920. Pagniez, P.: Ibid. **29**: 45 (Jan. 15) 1921.
5. Miller, J. L., and Raulston, B. O.: Treatment of Migraine with Peptone, J. A. M. A. **80**: 1895 (June 30) 1923.
6. Curtis-Brown, R.: Brit. M. J. **1**: 155 (Jan. 24) 1925.
7. Sherwood-Dunn, B.: Internat. Clin. **4**: 72, 1923.
8. Rohrer, quoted by E. Bates Block in Tice: Practice of Medicine.
9. Brown, T. R.: Rôle of Diet in Etiology and Treatment of Migraine and Other Types of Headache, J. A. M. A. **77**: 1396 (Oct. 29) 1921.

headaches appear at times to fall under this classification. In a second group, the protein of the food appears to play the important rôle. The third group includes those rather unusual cases with associated true intestinal toxemia or bacteremia. The fourth group presents an error in purine metabolism. Brown also notes that certain specific proteins seem sometimes to be responsible, and remarks that this is suggestive of the attacks being a form of anaphylaxis. But in his experience the skin test has generally been absolutely negative. He feels that such tests are of little value except in cases associated with definite skin lesions, such as eczema or urticaria. Although he has used peptone in some cases, his treatment is primarily that of general protein restriction in the same manner as in the first group, in which he practices general carbohydrate restriction.

From this survey of the literature, it may be concluded that there is much evidence suggesting an allergic basis for some cases of migraine, but that the evidence is chiefly indirect. I should like to see more direct evidence, such as Wallis and Nicol have furnished in the case of epilepsy. These authors, quoted by Miller,[10] made protein sensitization tests in 122 insane epileptic patients. Forty-six gave positive reactions. With those sensitive to a particular food, the withdrawal of this article was followed by striking improvement, the seizure disappearing entirely, only to return in case the offending food was again ingested.

I present the following case histories as a further contribution to the study of migraine as an allergic disease:

REPORT OF CASES

CASE 1.—Miss M., aged 30, had suffered for years from attacks of migraine, rarely being free longer than for one or two months. Dec. 4, 1921, she was tested with various food proteins. All reactions were negative at the end of one-half hour. After six hours, the reactions to rice, sweet potato and turnip were recorded as two plus. Sept. 16, 1922, nine and one-half months after she had first omitted rice, sweet potato and turnip from the diet, the following note appeared in her record: "Since December, 1921, she has eaten no sweet potato, rice or turnip, and during this interval she has not had a single attack of sick headache. Three days ago she took one sweet potato as an experiment. There followed during the next twenty-four hours considerable nausea and dizziness with some headache. The patient states that the attack was of the same character as those she had suffered before December, 1921." Dec. 20, 1922, the patient ate one turnip. This was followed in a few hours by bad nausea, dizziness and a low grade headache. Two days later the experiment was repeated, and was followed in a few hours by nausea and a severe typical migrainous headache.

Since 1922, she has remained on her dietary restrictions and continues free from migraine. Occasionally, she experiences a dull, occipital ache preceding and following the catamenia, which she states is altogether different from her former sick headache.

CASE 2.—Miss F., aged 25, first examined in December, 1921, complained of bilious attacks, with headaches coming once every two or three months. The pain was always right sided. She was always nauseated but did not vomit. The duration of attacks was two or three hours. This condition had existed for three years. She had had similar attacks in early childhood up to 8 years of age.

March 12, 1922, the patient developed a most severe attack lasting forty-eight hours, and accompanied by vomiting. Following recovery she was tested with the food proteins, and gave positive reactions to beet, sweet potato, turnip, wheat and coffee. In the succeeding three months she had two very mild attacks, one following the eating of shrimp, to which she was not tested, and the other attributed to unusual fatigue. She described herself as being tremendously improved. June 29, 1922, she had a mild headache. This was traced to fried chicken which had been dipped in flour. Otherwise, she had up to that time completely eliminated wheat from the diet.

Aside from these three attacks, two of which were readily explained, the patient remained entirely free from headache for six months from March until September, 1922, when an attack was induced experimentally by the eating of two slices of bread. This was administered September 1, at 9:30 a. m. By 1 p. m. she was nauseated, and by 3:30 she had a severe migrainous headache requiring her to stop work and go to bed. Coincident with the administration of bread, the Widal colloidoclastic reaction was determined. It was negative, the white count prior to administration averaging 6,800; one hour later 7,000, and two hours later 9,000. There was no noteworthy change in the differential count. However, the blood pressure, which was 100 systolic and 56 diastolic prior to the administration of two slices of bread, fell to 85 systolic and 60 diastolic at the end of one hour.

Three days later the colloidoclastic reaction was repeated, this time with milk, and the reactions were the same but there was no subsequent headache.

Following the experimental headache, Sept. 1, 1922, the patient remained free of symptoms until May 10, 1923. She had no contact whatever with wheat until April 21, 1923, when she was directed to eat one slice of bread daily while taking peptone capsules forty-five minutes before meals. She did this and remained headache free for twenty days until May 10, when the headache returned and she was forced again to discontinue the eating of wheat. Jan. 26, 1924, the patient returned, again complaining of headaches. It developed that she was then eating whole wheat bread. She was directed again to omit wheat. At that time she passed from under my supervision.

Two years later her family physician informed me that she still could not eat wheat without developing migraine, but that as long as she remained on her diet she was free from headache. The other articles of food she had no difficulty in eliminating. With the idea that suggestion might be playing a great part in this case, I told her physician to give her several pellets of bread in capsules, so that she would not be aware of the nature of the test. This he did, and reported that the experiment was promptly followed by a typical severe attack of migraine.

CASE 3.—Mrs. W., aged 24 had had attacks of migraine all her life, which became worse during the six months preceding the first consultation. She was particularly likely to have them with the catamenia, and stated that practically as long as she could remember she had had at least one headache a month. Four additional members of her immediate family are subject to sick headaches. The patient had never suspected any particular article of food.

She was first tested with food proteins, March 16, 1923. Prompt positive reactions were obtained to tomato and peanut, and a delayed positive reaction to wheat. The patient then remarked that just preceding her last headache she had eaten a large number of peanuts. She was very fond of both peanuts and tomatoes.

Eleven months later, Feb. 15, 1924, her record read as follows: "The patient has remained on her diet quite faithfully since she was first tested, and she has always found that the eating of wheat, peanuts or tomatoes has precipitated a headache. Occasionally she has had headaches without eating these substances, and for this reason she has been tested with additional proteins. She gave questionably positive reactions to wheat, peanut, lettuce and pecan. She has been planning on continuing to leave these out of her diet, but since returning to Richmond she has been to social functions where it has been almost impossible to escape eating wheat, and as a consequence has suffered a recurrence of her headaches."

In March, 1925, two years after the first test, the record reads: "Patient has been doing splendidly. She still avoids wheat in excess. When she eats any large amounts of wheat for three or four days she is sure to have a sick headache. Otherwise she is symptom free."

CASE 4.—Mrs. C., aged 52, seen, May 21, 1923, had had recurring sick headaches as far back as she could remember. The preceding winter they had been unusually severe. They came at longer or shorter intervals, but never missed more

10. Miller, J. L.: Am. J. M. Sc. **168**: 635 (Nov.) 1924.

than a few months. Usually they were much more frequent. There was no relationship to the catamenia. The patient had never incriminated any special article of food other than chocolate candy. She had, however, suspected eggs. The patient had in the past had some mild hay-fever symptoms coming on in the spring time. She suspected a maple tree in her yard as being the cause. Many years before she had had an urticaria. There was a pronounced family history of allergic disease, one brother having hay-fever, her mother having had sneezing spells, a great-aunt and several cousins having had asthma, a daughter eczema, and her mother sick headaches since childhood.

The patient gave a prompt reaction to egg yolk and good delayed reactions to the proteins of wheat, strawberry and rye. Borderline reactions were obtained to several other foods.

One year later the patient reported that she had had an occasional headache but on the whole was very much improved. In February, 1925, she reported that as long as she followed the dietary restrictions she remained free from her symptoms but otherwise developed migraine.

In February, 1926, nearly three years after the first testing, the patient, not living in Richmond, replied to a follow-up questionnaire. She recorded herself as being very much improved, with fewer and less violent headaches, less general feebleness, and an absence of a feeling of being constantly poisoned. She stated that she developed headaches now only when she became unusually exhausted or when she ate wheat flour. "I am steadily growing stronger but don't attempt wheat. I was violently ill the day following my last attempt —toast at lunch, a year ago." She had had no other form of treatment.

CASE 5.—Miss M., aged 48, had had, when first seen in May, 1922, a left hemicrania of six years' duration. The attacks were extremely severe, and were associated with nausea and vomiting. The duration of attacks was usually about two days; they were relieved with purgation. In addition, she had a duodenal ulcer. She was found sensitive to several articles of food but particularly so to wheat, and her wheat intake was cut down but never strictly eliminated until January, 1926, more than three and one-half years later. During these three and one-half years she found that her attacks were worse when eating away from home, when of necessity she ate more wheat. Peptone desensitization by mouth was unsuccessful. In January, 1926, wheat was completely eliminated from the diet, and four months later the patient, who lives out of Richmond, writes: "It has helped me wonderfully to cut out wheat bread entirely. I believe if you had had me do this from the very first it would have been the end of sick headaches." Sept. 3, 1926, she reported that she could not yet eat wheat, for when she did she developed headache. From experience she had learned that she also could not eat peas or strawberries. The reaction to strawberry had been negative. That to peas had been borderline at the end of twenty-four hours.

The five following cases are reported briefly. They are not as striking as the preceding cases because the record does not show so clearly the return of attacks on reexhibition of the specific allergen. They all agree, however, in giving evidence of relief from symptoms as a result of the application of the same principles of therapy.

CASE 6.—C., a man, aged 70, had had migraine from age 45 to 60, following which he was free until during the few months preceding the first examination in July, 1922. He was found sensitive to the proteins of banana, beef, cabbage, carrot, cauliflower, lamb, veal and wheat. These were avoided, and three years later he reported continued freedom from migraine.

CASE 7.—Mrs. K., aged 43, a highly neurotic patient with many and diverse neurasthenic symptoms, complained of two types of headache: one, a drawing pain at the back of the neck nearly constantly present, and the other a true headache without nausea or vomiting, coming on usually with the catamenia. These had existed since puberty. She was found very mildly sensitive to carrot, chicken, oat, perch, prune, tomato, tea and wheat, and one year later reported that the second type of headache had been quite satisfactorily relieved by the dietary restrictions but that the first type persisted, together with her outspoken neurasthenic manifestations.

CASE 8.—Mrs. D., aged 50, had had typical migraine for twenty-five years, coming at intervals of from one week to ten days. She stated that she spent half of her life in bed on account of headache. These were usually associated with definite ocular prodromes. In December, 1921, she gave positive reactions to clam, beet, oats and spinach.

During the next four and one-half months she had two mild attacks, and at the end of this time a most severe attack. At the first examination only the immediate sensitization reactions had been read, and for this reason she returned for further testing. This time she gave two plus reactions to banana, cabbage, celery and coffee and a one plus reaction to turnip and wheat. On learning of these reactions she felt sure from past experience that asparagus, celery and cabbage had caused attacks of indigestion, and that turnip and banana had produced headache. Five and one-half months later, in September, 1922, the patient reported that as long as she remained on the diet she remained free from sick headaches. She did, however, have a dull headache on arising each morning, which cleared up after about one hour. In February, 1923, the attacks returned and recurred at frequent intervals until May of that year, when intradermal sensitization tests showed positive reactions to peanut, strawberry and tomato. These she was directed to avoid, in addition to those previously mentioned. Since this time the patient has passed from under my observation.

CASE 9.—Mrs. S., aged 43, seen in consultation, had had typical migraine with nausea and vomiting for ten years, coming at intervals of from two to three months. She gave two plus positive reactions to peanut, strawberry and turnip, and questionable reactions to onion, oyster, spinach, carrot and wheat. Her physician was advised to have her avoid these foods, and two years later reported that she was still free from headaches.

CASE 10.—Mrs. R., aged 44, had had periodic headaches without nausea or vomiting, sometimes unilateral, sometimes bilateral, coming at intervals of from two to four weeks, rarely as long as two months, the condition having existed since early childhood. There were no visual symptoms. The eyes usually became sore during these attacks. Hypodermics were sometimes necessary for relief. Following sensitization tests, the patient omitted tomatoes, cheese, pork, tea, lettuce, lamb, carrots, sweet potatoes, peach, fig and plum from the diet and avoided all candies and sweets. Until her death from pelvic abscess, three years later, she had headaches only at those times when she broke her diet.

COMMENT

In the series here reported, treatment by specific avoidance, based on the theory of allergy, has prevented attacks of migraine. In typical cases, renewal of contact with those foods to which the patient has been found sensitive caused return of the attacks. I feel that this constitutes more direct evidence of the allergic character of migraine than any that has hitherto been presented.

In a total of thirty-three cases of migraine or chronic periodic headache, the patients have been tested for food sensitization. The ten cases described present definite evidence of relief from avoidance of allergens, discovered through the skin tests. Two other patients with chronic headaches have been relieved, one for six years by wheat avoidance, the other for the last two years by milk avoidance. Four experienced great relief during the period of observation (from six to thirteen months), but their present state is not known as they did not reply to a follow-up questionnaire. Ten were followed closely for some time and did not derive relief from the treatment. Seven referred patients have not been seen since the tests were made, and did not reply to the follow-up questionnaire.

CONCLUSIONS

In twelve of the thirty-three cases (36.4 per cent), allergy appears quite definitely to have played a part. In four others, there was at least temporary improvement on avoidance of certain proteins. Ten patients were not benefited. Seven did not reply. These must be recorded as not benefited, although my experience with follow-up questionnaires is that the patients with good results are as likely to fail to reply as are those with bad results.

Among the ten unsuccessful cases, three patients gave good positive sensitization reactions, but in spite of good cooperation, their condition was not improved. One of these, sensitive among other things to egg, continues with her migraine but reports that eggs always exaggerate her symptoms. Her general physical condition has improved decidedly since she has avoided food containing eggs.

There is considerable evidence that in migraine a central nervous system angiospasm exists. Angiospasm is the characteristic vascular phenomenon in anaphylaxis.

From a study of my own records, I believe that the poor results with skin tests reported by other writers may be due in part or entirely to failure to pay sufficient attention to the delayed positive reactions coming on after from six to twenty-four hours. I have stated elsewhere [11] my reasons for believing that the delayed reaction is, if anything, more characterictic in this type of condition than is the immediate reaction.

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SPONTANEOUS FISTULAS IN LYMPHOGRANULOMATOSIS *

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In differentiating the causes of enlarged cervical glands, the occurrence of fistulas is usually taken as evidence of tuberculosis. The fistulas in lymph gland tuberculosis are the result of caseous areas attaching to and perforating the skin. Caseation is common in tissues invaded by lymphogranuloma (Hodgkin's disease). This form of necrosis occurs oftenest in the densely matted glands of the late stages. Lymphogranuloma characteristically respects anatomic boundaries. In advanced cases, however, it infiltrates the gland capsule and invades adjacent structures. According to Naegeli,[1] the skin over the lymphogranulomatous glands remains absolutely intact. In his experience, infiltration of the skin, adhesion of the affected glands to the skin, or fistulas have never occurred, except as sequelae to injections.

REPORT OF CASE

J. W., a white man, aged 57, a section hand, entered the service of Dr. E. K. Kerr at the Cook County Hospital, May 21, 1926, with the diagnosis of Hodgkin's disease. Two and a half years before, an acute "cold" kept him at home one week. Following this, he tired easily and lost weight. His skin became very dark. Troublesome itching kept him from sleeping. He had night sweats regularly, and lost his appetite. After six months, the symptoms caused him to seek medical advice. Large glands were found in both sides of his neck. They were slightly tender. Intensive roentgen-ray treatment for eight weeks almost entirely removed the swelling. The weakness increased. Cessation of the roentgen-ray treatment was followed by the recurrence of the large glands in the neck and in the left axilla. Roentgen-ray treatment was resumed. This time it did not reduce the swellings. One month before admission, the cervical glands became fluctuant and a cheesy material broke through the skin. The patient had lost 75 pounds (34 Kg.). He had never been ill previously and there had not been a history of tuberculosis, cancer or "gland disease" in the family.

The patient was tall and moderately emaciated. The systolic blood pressure was 134 mm. and the diastolic pressure, 84 mm. His skin was an even dark brown. His teeth were false. The tonsils were small and not inflamed. The glands on both sides of the neck were matted into fist-sized nodular masses. These were semifluctuant. Yellow caseous material exuded from an opening just anterior to the left sternocleidomastoid muscle. Except at this fistulous opening, the gland masses were movable under the skin and over the underlying structures. A fist-sized pocket of glands in the left axilla compelled him to hold his arm partially abducted.

The glands in the right axilla were slightly enlarged and firm. The inguinal glands were the size of hazel nuts. Large masses could be felt in the pelvis.

A roentgenogram supported the diagnosis of serofibrinous pleurisy in the left chest, and also revealed a widened mediastinum (probably due to enlarged glands). This was not detected on physical examination. The lungs themselves were normal.

Except for a basal systolic murmur, abnormal heart conditions were not present. The liver was firm and just palpable. The spleen was hard and easily felt.

Roentgen-ray examination did not show any defects in the bones and joints other than a slight "lipping" of the thoracic vertebrae.

Routine urine examinations were negative.

The hemoglobin was estimated at 55 per cent (Tallqvist). There were 3,160,000 erythrocytes and 23,100 leukocytes. Several differential counts showed 86 per cent of the white cells to be polymorphonuclear neutrophils; 8 per cent lymphocytes; 4 per cent mononuclears, and 2 per cent polymorphonuclear eosinophils. The red cells were pale but otherwise normal. The blood Wassermann reaction was negative. After a twelve hour fast, 100 cc. of the blood contained 32.97 mg. of urea, 3 mg. of uric acid and 1.5 mg. of creatinine.

Repeated stool examination gave normal results.

Pieces of the glandular enlargements were excised on three occasions from regions widely separated.

Chester Guy, the hospital pathologist, pronounced them all typical of lymphogranuloma. His report stated that the sections consisted of lymphoid elements separated and surrounded by rather dense connective tissue. The gland elements were poorly circumscribed and were made up of round and plasma cells and contained a large number of polymorphonuclear leukocytes. There were also present many large mononucleated and multinucleated cells of the Sternberg type. The diagnosis was Hodgkin's lymphogranulomatosis.

Incision into the glandular swellings showed them to be largely liquefied, even in the nonfistulous areas. The introduction of a hemostat opened pocket after pocket of cheesy, semiliquid material. A fistulous tract excised from the neck gave the same histologic results. Guinea-pigs inoculated with the caseous material and with the macerated gland were killed after two months. They did not show evidence of tuberculosis or other disease. Repeated smears of the caseous material were negative for tubercle bacilli or Much granules, but they did show occasional unidentified bacilli and cocci.

Subcutaneous injection of first 0.75 mg. and then 2 mg. of old tuberculin did not provoke a reaction.

On admission, the patient had one fistula leading into the swollen left cervical glands. Another fistula developed in a biopsy incision. During his stay in the hospital, fistula formation was observed in the left axillary swelling. The skin would become adherent to the underlying glands and at this spot tense fluctuation could be felt. The skin became stretched and smooth, a yellow spot of necrosis would appear in the center of the tense area, and caseous material would then break through. The patient's temperature fluctuated between 98 and 101 F. It was irregular and intermittent. He had many fever-free intervals of several days' duration.

11. Vaughan, W. T.: South. M. J. 17: 749 (Oct.) 1924.

* From the Medical Service of Cook County Hospital.

1. Naegeli: Leukämie und Pseudoleukämie, 1913.

The blood condition remained practically unchanged. He became weaker. The pigmentation increased. He left the hospital after ten weeks' observation.

In this patient, lymphogranuloma behaved more than usually like tuberculosis of the lymph glands. However, the specific tests excluded tuberculosis.

In a careful review of the literature, I could not find an instance of spontaneous skin fistulas developing in a proved case of lymphogranuloma. The records of the Cook County Hospital for the last six years and of the Presbyterian Hospital of Chicago for the last eight years did not contain an instance of fistulas in proved cases of lymphogranulomatosis. Many of the patients had had intensive roentgen-ray treatment.

The skin infiltration in Linser's [2] case followed an incision into the lymphogranulomatous swelling. He remarks that the infiltrative growth characteristic of lymphogranuloma is especially likely to cause necrosis. Meyeringh [3] calls Sternberg's attention to the lymph and blood vessel infiltration by lymphogranuloma. Meyeringh regards his own case of fistulas as lymphogranuloma caused by a low grade tuberculosis. His histologic description makes the diagnosis of tuberculosis very plausible.

Düring [4] said, "The literature does not contain any record of the adhesion of lymphogranulomatous glands to the skin."

Kaufmann makes a brief mention of a woman with lymphogranuloma of the axillary glands. In her, the glands became adherent to the skin and perforated in mushroom-shaped growths.

Fistulas into the gastro-intestinal tract following infiltration of the stomach or bowel wall by lymphogranuloma of the mesenteric glands have been noted.

Fabian [5] shared the opinion of Fränkel and Much [6] that lymphogranuloma could not be differentiated from tuberculous adenitis. Sternberg originally attributed the condition seen in lymphogranuloma to tuberculosis. He later retracted this view.

The only factor other than the lymphogranuloma tending to produce glandular necrosis and fistulas in my case was the prolonged radiation. But fistula formation under roentgen-ray treatment is typical of glandular tuberculosis rather than of lymphogranuloma.

Sweaney [7] has recently recognized "mutation" or degenerate forms of tubercle bacilli. He suggests that lymphogranuloma may be a form of tuberculosis, and that the diphtheroid organisms described by Billings as well as the granular forms of Fränkel and Much may be degenerated tubercle bacilli.

CONCLUSIONS

1. Lymphogranuloma can be clinically indistinguishable from tuberculosis of the lymph glands.
2. Lymphogranuloma can spontaneously invade the skin and produce fistulas.
3. The caseous material from such processes is grossly identical with the liquefaction necrosis in tuberculosis.
4. Only histologic study and animal inoculation can clearly distinguish lymphogranuloma from tuberculosis of the lymph glands.

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2. Linser: Lymphogranulome mit ulcerösen Hautveränderungen, Arch. f. Dermat. u. Syph. **149**: 349, 1925.
3. Meyeringh: Ueber einen Fall von Lymphogranulomatose mit Durchbruch durch die Haut, Deutsche Ztschr. f. Chir., 1922, Nos. 176-177, p. 185.
4. Düring, quoted by Meyeringh (footnote 3).
5. Fabian: Centralbl. f. allg. Pathol. u. path. Anat. **22**: 4, 1911.
6. Fränkel and Much: Ueber die Hodgkinsche Krankheit, Ztschr. f. Hyg. u. Infektionskrankh. **67**: 159, 1910.
7. Sweaney, H. C.: The Mutation Forms of the Tubercle Bacillus, J. A. M. A. **87**: 1206 (Oct. 9) 1926.

ACUTE ENCEPHALITIC PARKINSONISM *

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The case herein described is of interest because of the development of a paralysis agitans syndrome almost immediately following an attack of acute epidemic encephalitis. It is of further interest because the condition lasted only a short time, and has not recurred in two years.

REPORT OF CASE

History.—L. F., a Jewish boy, aged 15, entered the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases, Nov. 26, 1924, complaining of pain, twitching and stiffness in his right shoulder and arm. The family history is unimportant. Both parents were alive and in good health, and the patient was the second in a family of four. His birth and development had been entirely normal. While not particularly bright in his school work, he had done very well and at the time of entrance to the hospital he was in his first year of high school. He was an active youngster, fond of sports, wont to spend his spare time in many sorts of games, and not at all intellectually inclined. He had had measles, pertussis and pneumonia in childhood but beyond these no illnesses. He was entirely well until ten days before his entrance into the hospital. At this time, he complained to his physician of an uncomfortable feeling in his throat when swallowing. No localized condition was found by his family physician, and he was sent home. A day or two later, not longer, he noticed a drooping of his eyelids, extreme drowsiness in the daytime, and sleeplessness at night. It was noted that he was drowsy in school, falling asleep over his work, and his mother complained of the fact that he was lazy. After returning from school, instead of taking part in the neighborhood sports as had been his usual custom, he sat around the stove and dozed. For the first two or three days of his illness he complained of double vision, but this disappeared and never returned. All these manifestations were apparent during the first three days of his illness. On the third day he was put to bed. Five days after the onset of his trouble he complained of pain and twitching in the right arm. His pain was first localized in the shoulder joint, and later in the upper arm. Simultaneous with his pain and twitching there occurred a stiffness of his right arm and leg, and shortly afterward in his left arm and leg. In this condition he was brought to the hospital.

Examination.—The youngster was pale and toxic-looking, and lay in bed with the eyes half closed and a dull, apathetic appearance. The head, ears and nose were normal. The condition of the teeth was poor, but none were openly carious. There was a mild degree of pyorrhea. The heart and lungs were entirely normal. The blood pressure was 128 systolic and 80 diastolic. Examination of the abdomen was negative. Neurologically, the following conditions were noted: slightly irregular pupils with good light reaction, and a moderate degree of ptosis of the eyelids which was more marked on the left side. There was a slight abducens weakness in both eyes, more marked on the right than on the left. The cranial nerves otherwise were normal. All four limbs showed increased tonus, but the right side was markedly more involved than the left. A cog-wheel phenomenon could be elicited in both arms. The arms were held semiflexed, the hands in the pill-rolling position but with very little tremor. The gait was typical of a parkinsonian condition, with the body bent forward and the arms slightly flexed. When walking, a pill-rolling movement of the right hand was initiated. This ceased when the patient was at rest. The right leg was decidedly more rigid than the left in locomotion. The facies was dull and apathetic. The reflexes were everywhere hyperactive, with those of the right side increased over those on the left. Plantar irritation caused flexion of all the toes. There was

* From the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases, service of Dr. T. H. Weisenburg.

no ankle or patellar clonus. The Romberg and Oppenheim phenomena could not be elicited. The Kernig and Brudzinski signs were absent. The entire picture was that of a parkinsonism, more marked on the right side than on the left.

Laboratory examinations revealed the following conditions: The specific gravity of the urine was from 1.025 to 1.028; no albumin, sugar, casts, indican, acetone or diacetic acid were found on several examinations. The leukocytes numbered 10,600 at the time the patient entered the hospital, and later 11,000 and 8,900, the latter just before discharge. There were 4,670,000 erythrocytes; the hemoglobin was 76 per cent. The blood Wassermann reaction was negative. The spinal fluid showed 7 cells, an increased albumin of 2+, a negative Wassermann reaction, a colloidal gold curve of 0000000000, and a spinal fluid sugar content of 108 mg. per hundred cubic centimeters. Roentgenograms of the skull and the sella did not show abnormalities, and roentgenograms of the teeth and sinuses did not reveal foci of infection.

Course.—During the first ten days in the hospital, the patient was decidedly worse. His extremities became more rigid, and the left arm and leg became worse than at time of entrance. The ptosis was more marked. At times, one leg or one arm would lose much of its rigidity and become readily movable, lapsing again, however, into its former state of rigidity. Certain stereotyped and persistent movements appeared. He opened and closed his right hand continually, or flexed and extended his left forearm or left leg. On the tenth day after admission the patient was given mercurosal intravenously and from this time he showed a steady improvement. The drug was administered twice weekly until seven doses had been given. On the thirteenth day he was much brighter, the ptosis had cleared entirely, the facies was more plastic, but the parkinsonian attitude still remained. On the fourteenth day he was much brighter, could read a book, use his right hand to turn the pages of the book, and was definitely less rigid in all the limbs, particularly in his right arm and leg, which had been most affected. He continued to improve steadily, and twenty-seven days after his admission to the hospital he was discharged perfectly normal in appearance, with his rigidity and his parkinsonism gone, and only a slight weakness in his right hand as a residue of his illness.

It is now practically two years since his illness. He was examined, Oct. 25, 1926, and found to be in excellent condition. His only complaint was an inability to gain weight. For six months after leaving the hospital he attended a business school. In May, 1925, a gangrenous appendix was removed, after which he worked as a shoe clerk for thirteen months. At present, he is in charge of a gasoline filling station and is able to work regularly.

COMMENT

It is generally felt that a parkinsonian condition is a late manifestation or sequel of epidemic encephalitis. In the majority of instances this is unquestionably true. Postencephalitic paralysis agitans manifests itself months or even years after an acute attack of encephalitis, or even in the absence of an acute attack, as reported by Wimmer [1] and more recently by Burr.[2] That it can and does occur very shortly after the acute illness, or even, as in our case, almost during the illness, as a complication, is equally true. Levy,[3] in 1922, called attention to acute parkinsonian states and reported a case that occurred in a child of 12 years, two and one-half months after the onset of encephalitis. More recently, Lemos [4] reported a case of a youth of 18 who developed a parkinsonism seven weeks after his acute attack of encephalitis, during which there was profound somnolence, slight fever and later diplopia. The first indications of a parkinsonian condition were a fixed facies, sialorrhea, and a gradual development of a typical paralysis agitans. In addition, there occurred in this case intermittent claudication in the legs, conjugate deviation of the head and eyes in typical spasmodic attacks, and spasm of the masticatory and glossopharyngeal musculature. All of these phenomena were attributed to encephalitis with a localization in the striatum.

But while these two cases came on relatively shortly after the acute attack of encephalitis, they were by no means as acute as the case reported here. Leroy [5] has reported a case which simulates ours more closely. The patient was a man of 30 who, three weeks after the onset of an encephalitis, had a typical parkinsonian syndrome with fixed facies, paucity of movement, apathy, rigidity, increased reflexes, and a typical gait and posture. The parkinsonism may have developed earlier than stated, but the author was not called in to see the case until the third week of the illness. More recently, Lemos [6] reported the case of a young man of 18 who developed a parkinsonian syndrome in the second week of his encephalitis.

The mere occurrence of an acute encephalitic parkinsonism is not in itself important. It is probably not surprising that a disease which is so severe in its manifestations, and which may cause a parkinsonian state so frequently, should be able to produce such a condition as an acute complication. One ceases to be surprised at the varieties and types of neurologic disorders that encephalitis may produce. After all, there seems to be no reason why acute parkinsonism in encephalitis should not occur, but the fact that this type of disorder is in almost all instances regarded as a late sequel of encephalitis makes this particular case of extreme interest. Again, the extreme rapidity with which the disorder developed, first manifesting itself five days after the onset, becoming quite fully developed in ten days and terminating in recovery in five weeks, opens up a wide field for speculation as to the nature of the pathologic changes. Whatever the nature of the noxious agent, it must have been of sufficient strength to produce changes in the globus pallidus or in the substantia nigra and to interfere temporarily with the function of these regions.

Whether the lesion was in one or the other, or in the muscle spindle as recently pointed out by Byrnes,[7] can be only a matter of speculation in the absence of necropsy data. The question of the location of the disease is still a moot point, as shown by the work of Hunt,[8] Souques,[9] Lhermitte and Cornil,[10] Marinesco,[11] Trétiakoff,[12] Foix,[13] Strauss and Globus,[14] Meggendorfer [15] and Jakob.[16] It is undetermined whether it is

1. Wimmer, A.: Chronic Epidemic Encephalitis, London, William Heinemann, 1924.
2. Burr, C. W.: Sequelae of Epidemic Encephalitis Without any Preceding Acute Illness, Arch. Neurol. & Psychiat. **14**: 20 (July) 1925.
3. Levy, Gabrielle: Contribution a l'étude des manifestations tardives de l'encéphalite épidemique, Paris, Vigot, 1922.
4. Lemos, M.: Claudication intermittente, crampe des ecrivains, déviation conjugée de la tête et des yeux, etc. apparus au cours d'un syndrome parkinsonien, Rev neurol. **2**: 425 (Nov.) 1924.
5. Leroy, A.: Acute Encephalitic Parkinsonism, J. de neurol. et de psychiat. **25**: 254 (April) 1925.
6. Lemos, quoted by Leroy.
7. Byrnes, C. M.: A Contribution to the Pathology of Paralysis Agitans, Arch. Neurol. & Psychiat. **15**: 407 (April) 1926.
8. Hunt, Ramsay: Progressive Atrophy of the Globus Pallidus (Primary Atrophy of the Pallidus System), Brain **40**: 58, 1917.
9. Souques, A.: Rapport sur les syndromes parkinsoniens, Rev. neurol. **28**: 534, 1921.
10. Lhermitte, J., and Cornil, D.: Recherche anatomique sur la maladie de Parkinson, Rev. neurol. **28**: 587, 1921.
11. Marinesco, G.: Un cas de parkinsonisme progressif post-encéphalitique, avec examen histologique dur système nerveux, Rev. neurol. **29**: 1012, 1922.
12. Trétiakoff, C.: Contribution a l'étude de l'anatomie pathologique du locus niger de Soimmering avec quelques deductions relatives a la pathogénie des troubles du tonus musculaire et de la maladie de Parkinson, Rev. neurol. **27**: 954, 1920.
13. Foix, C.: Les lésions anatomiques de la maladie Parkinson, Rev. Neurol. **28**: 593, 1921.
14. Strauss, I., and Globus, J. H.: A Contribution to the Neuropathology of the Parkinsonian Syndrome Following Epidemic Encephalitis, Tr. Am. Neurol. A., 1922, p. 329.
15. Meggendorfer, F.: Chronische Encephalitis epidemica, Ztschr. f. d. ges. Neurol. u. Psychiat. **75**: 189, 1922.
16. Jakob, A.: Der amyostatische Symptomenkomplex und verwandte Zustände, Deutsche Ztschr. f. Nervenh. **74**: 47, 1922.

the globus pallidus or the substantia nigra that is involved in the encephalitic process. It may be that paralysis agitans and postencephalitic parkinsonism are two distinct entities or merely different degrees or stages of the same entity. In a recent communication on parkinsonian states, Hassin and Bassoe [17] describe a case of acute epidemic encephalitis in a man, aged 57, who, four weeks after the onset of his illness, had some parkinsonian features, such as a masklike face, rigidity and hypertonia. He died of bronchopneumonia. Necropsy revealed "marked perivascular infiltration with hematogenous elements in the basal ganglia, substantia nigra, and medulla oblongata. . . . Little was found in the globus pallidus. . . . Thus, inflammatory phenomena were combined with a more or less diffuse degenerative process which especially involved the corpus striatum, as well as the substantia nigra, practically sparing the globus pallidus." It is possible that some such process occurred in our case, but of much slighter intensity.

Much work has been done on the etiology of epidemic encephalitis but without conclusive results. The picture in our case is similar to that pointed out by Marie, who spoke of an encephalitic virus, which, exploding like shrapnel, involved all parts of the nervous system. It is hard to imagine, however, a virus that could produce such profound changes and retreat without leaving marked traces of devastation. It is two years since the illness, and the patient is now in excellent health without any signs of parkinsonism, and he is able to carry on his work. The whole process may be explained on a toxic basis, the toxin producing acute changes in the nerve cells of the substantia nigra or globus pallidus with complete recovery of function of the cells implicated, thus producing the parkinsonian state. In addition, there were probably definite inflammatory changes in the midbrain. Although Hohman [18] has pointed out that the process in encephalitic parkinsonism is necessarily a chronic progressive degenerative inflammation, we are unable at the present time to demonstrate clinically any such evidence of pathologic change in our case. After all, the best explanation of the process probably lies in the fact that there were acute inflammatory changes resulting in infiltration, edema and exudate, and that these acute manifestations having subsided are now quiescent but ready to flare up at some opportune provocation.

17. Hassin, G. B., and Bassoe, P. A.: Parkinsonian States: Clinicopathologic Studies, Arch. Neurol. & Psychiat. **15**: 218 (Feb.) 1926.
18. Hohman, L. B.: Pathologische-anatomisch Untersuchung über den encephalitischen Parkinsonismus, Obersteiner's Arb. **27**: 1, 1925.

Resistance to Quinine in Malaria.—I first contracted malarial fever in the Shan States in 1897. I found powders, pills and tablets of quinine sulphate useless, and the acid solution made me vomit; I was able to retain the powder dissolved in brandy, and soon got rid of the fever. Later on, when I was staff surgeon in Mandalay, I had a similar experience with many officers and their wives. This experience was repeated in the Punjab and again in the Northern Transvaal. It was not until I served in Macedonia during the war that the superiority of quinine hydrochloride was brought to my notice. I found it was not necessary to give intramuscular injections of quinine if the hydrochloride could be obtained, and was administered by the mouth. During the last five years I have treated a good many relapses of malarial fever in England. The records showed that the patients had previously been on the intensive course of quinine sulphate (the method usually prescribed). Under the hydrochloride every patient soon recovered, their blood films being all negative.—"R. A. M. C.," *Brit. M. J.* **1**:702 (April 9) 1927.

RESULTS OF OPERATION FOR UNDESCENDED TESTIS

WITH CONSERVATION OF THE SPERMATIC CIRCULATION *

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The subject of nondescent of the testis and its adequate correction is discussed by various writers from a vast number of angles. In fact, each author suggests different theoretical considerations in regard to its etiology and the proper operative procedures for its cure.

An experience with fifteen cases in which operation was done, most of which could be followed during the last ten years, has given results which I believe should be considered satisfactory.

INCIDENCE

The incidence of undescended testis, according to the statistics of the United States War Department, is 3.1 per thousand. However, among 18,140 children coming to the Hospital for Ruptured and Crippled for the cure of inguinal hernia, 3 per cent of the cases were complicated by undescended testis. Among 3,848 boys examined between the ages of 14 and 21 years, the incidence was 2.2 per cent.

ETIOLOGY

Obviously, when many different theories in regard to the etiology of a pathologic condition are advanced, it is likely that at least two or three of them may be pertinent in a certain percentage of cases, but that no single etiologic factor operates in all cases. The literature contains not less than fifteen or eighteen different points of view.

Intra-abdominal obstructive processes, such as string-like adhesions between the testis and various intra-abdominal structures, are cited as the causative factor by Budinger, Riedel and Tuffier. Küttner states that the shortness of the vessels of the cord is the etiologic factor. This theory seems to be the one most generally accepted, but my own experience would emphatically tend to disprove it. Uffreduzzi believes that nondescent of the testis is an atavistic stigma. Other authors emphasize imperfect development and dysfunction of the gubernaculum, narrowness of the inguinal canal and deficient development of the scrotum as prominent factors causing nondescent of the testis. K. Hoffman believes that the condition depends on an anomaly or defect in development of the processus vaginalis. Eisendrath states that a deficiency in the arcuate fibers of the internal oblique is a constant observation, and many other causes are given. A careful analysis of the cases in which operation has been performed has made me conclude that the shortness of the vessels of the cord is not the cause of maldescent of the testis, but that, as Alivisatos states, this phenomenon is rather an effect of than the cause of the pathologic descent. At least two or three circumstances are causal in most cases. There are fibrous adhesions between the processus vaginalis and the walls of the canal; similar adhesions in the form of minute strands are present within the internal ring, adherent to the parietes and the various structures of the cord. Minute strands of fibers and muscle tissue within the component parts of the

* From the urologic department, Michael Reese Hospital.
* Read before the Chicago Urological Society, April 29, 1926.

cord itself often kink the cord and virtually, but not actually, shorten it. An imperfectly developed processus vaginalis often coexists. Whether the adhesions within the internal abdominal ring are due to a prenatal peritonitis, as has been suggested, I do not know.

Sisson states that, in cryptorchidism in the horse, the processus vaginalis is often rudimentary. He also notes the marked distance between the epididymis and testis in undescended testis, which condition is emphasized by Polya in human cases of faulty descent.

All cases in which operation was performed were in association with hernial sacs. In some the sac was insignificant; in others it was a prominent feature. During fetal life an invagination of the peritoneum, the processus vaginalis, is projected into the inguinal canal ahead of the gubernaculum testis. This outpouching always precedes the testis in its descent; however the advance of the two structures is simultaneous. With the complete descent of the testis the processus vaginalis fuses throughout its inguinal and scrotal portion, excepting at the lower end, where it forms the tunica vaginalis testis. Complete fusion of the process occurs only when complete descent of the testis takes place. Therefore, a congenital hernial sac is practically always found in association. The processus vaginalis is also present in the female and in animals in which the testis is normally within the abdomen.

COMPLICATIONS

Disturbances that may occur incidental to maldescent of the testis are especially torsion of the cord and incarceration of the testis. Acute inflammatory processes due to trauma or infections, such as mumps, gonorrhea and nonspecific infections of the urethra, also occur.

The pathologic changes that are practically constant in testes permitted to remain in abnormal positions are:

1. Variable thickening of the tunica albuginea and of the basement membrane of the tubules, which may be so great as to obliterate the lumen of the tubules (Uffreduzzi, and Ordione and Simons).
2. Spermatogenic cells, which, if present, are few and of irregular shape.
3. Well formed spermatozoa, which are seldom found.
4. The Leydig cells, which are present in large numbers.

These changes may be explained as due to chronic inflammatory alterations secondary to pressure on the undescended testis. The danger of malignant degeneration seems to be greater in undescended testes, but reports of various authors are not conclusive on this point. The recent work of Moore has definitely proved that the intra-abdominal temperature is too high for the proper function and development of the testis. In fact, he has shown that a normally functioning testis, when replaced in the abdominal cavity for as short a period as two weeks, will show degenerative changes in the seminiferous tubules. The same conclusion was reached by Frani in 1891, after his experiments in replacing the testes of white rats in the abdominal cavity. Stilling confirmed the work of Frani, in 1892, by his experiments on dogs. The tubules, however, may show reparative changes if the organ is again placed in the scrotum, and may return to normal if too long an interval has not elapsed.

A consideration of possible psychic effects is important in recommending operation. A youngster in a school gymnasium or swimming pool does not want to feel that he is differently constituted from his schoolmates. In later life, individuals with undescended testis not infrequently become sufferers from severe neuroses.

These considerations justify recommendation of operation for the cure of this defect before the age of 13, preferably in the years between 9 and 13.

OPERATIVE TECHNIC

Various technical methods have been described, each depending on the personal experience of the author, and each varying somewhat both as to what is to be accomplished and the mode of procedure. Koch of Munich was the first to operate, in 1820. Chelins performed the second orchidopexy. Neither of these surgeons obtained good results; the testis would not remain in the scrotum. Adams and Partridge were early operators in this field, but neither was successful. However, in 1880, Wood obtained the first cure by orchidopexy. The following year Max Schüler of Greifswald also obtained a satisfactory result. In 1885, John Wood, Lindenbaumer and Nicoladini reported two successful cases. Various technical procedures have been described by Forgue and Bidwell, who in 1893 stated that the spermatic artery could be cut with impunity. Castration in the presence of a short cord was recommended by Berger, Courtis, Guinard, Walton, Madden, Auftage and Aubertin. Mignon, in 1902, reported three successful cases in which he cut all the structures of the cord except the vas and its artery.

The German literature has been particularly pessimistic in regard to operative results, and up to 1922 reports at least 50 per cent of failures. Several recent authors still recommend removal of the undescended testis, as does the 1924 edition of Rose and Carless' Surgery. The French literature has supplied about as many different methods as the German, many of which offer valuable suggestions but which as individual methods are inadequate. The operation done in these fifteen cases was practically that suggested by Bevan, with slight modifications.

OPERATION

The incision begins at a point one-half inch above Poupart's ligament, divides the skin and superficial fascia, and splits in their cleavage the aponeurotic and muscular portions of the external oblique, thus exposing the inguinal canal. Beneath these incised layers lie the thin edges of the cremaster muscle and fascia, and these are in turn cut, after which the peritoneal pouch enclosing the undescended testis is encountered. This is the vaginal process of the peritoneum, and practically always communicates proximally with the peritoneal cavity. It may occasionally reach to the bottom of the scrotum, though the testis may be high in the canal or even within the abdomen. The vaginal process is divided well above the testis, and the upper end is freed by blunt dissection from the structures of the cord toward the abdomen, and then is ligated with catgut as near the internal ring as possible. The proximal part is allowed to slip back into the abdominal cavity, or else is sutured to the parietal wall above and mesial to the internal ring, by a mattress stitch from within. The lower part of the vaginal process is not, as in the original Bevan operation, utilized to make a tunica for the testis, but is either trimmed away or everted behind the testis so as to avoid the occurrence of hydrocele. The testis is protected with a sponge moistened with warm saline solution, and great care is used not to traumatize it during the manipulation. The cord is then freed along its entire continuity from any adhe-

sions that tend to shorten or kink it. This is the most delicate and time-consuming part of the operation. One is usually able to snip with fine scissors many of the fibrous strands, or they can be cut with a fine scalpel perpendicularly to the long axis of the cord when it is held taut. Within the component parts of the cord are likewise many fibrous and muscular strands which can be teased apart with serrefine forceps, or cut with the scissors or scalpel. This necessitates good vision and does not permit rapid work. However, the time consumed is well worth while, and this maneuver will help to allow the testis to be brought well down. The fibrous and muscular strands are derived from the three fascial coverings of the cord, but especially from the infundibuliform fascia; the more superficial coverings are the intercolumnar and cremasteric fascias. After one has made sure that these bands have been satisfactorily disposed of, the little finger is passed into the internal ring and gently frees the cord from any adhesions that may be holding it within the abdomen and also brings others into view, where they may be cut. This maneuver I also consider important, and it should always be done if the previous cutting and teasing apart of strands in the canal will not permit the complete descent of the testis. In the cases in which operation was done, the entire circulation to the testis was conserved in every instance, except in one early case in which a small vein was inadvertently torn. In no case was any artery ligated and cut. An excellent little technical point in determining whether sufficient mobilization has been obtained is to place the testis on the thigh, where it should remain without traction and without any tendency to ascend. This should be done before attempting to place the testis in the scrotum. When this test is entirely satisfactory, the testis is ready for its bed in the scrotum. The bed is made by finger dissection from the lower angle of the wound, and the testis is placed properly, so that the cord is not twisted on itself. A purse-string suture is placed in the soft tissues slightly above the uppermost portion of the scrotum close to the spine of the pubes and tied, so that the testis is not permitted to rise out of its bed during the closure of the inguinal canal. The inguinal canal is closed with kangaroo tendon according to the Andrews or Bassini technic for repair of hernia.

Character of Operative Material

	Number
PREOPERATIVE DATA	
Patients operated on	15
Age at time of operation:	
7 years and under	8
14 years and under	7
Bilateral nondescent	4
Left testis involved	7
Right testis involved	4
Hernia present	15
Evidences of malignancy	0
OPERATIVE DATA	
Testes conserved	19
Herniotomy (removal of sac)	13
Inguinal position of testis	11
Intra-abdominal position	2
Femoral (below Poupart's ligament)	2
Position of testis at end of operation:	
Upper scrotal	1
Midscrotal	4
Lower scrotal	10
FOLLOW-UP DATA	
Evidence of recurrent hernia	0
Evidence of malignancy	0
Position of testis:	
Midscrotal	4
Low scrotal	6
Size of testis:	
Marked increase in all cases returning for check-up.	

The accompanying table will show the character of the cases in which operation was done. I have followed closely the outline of Goetsch as being the most complete for presenting the various data.

COMMENT

In a series of fifteen cases of undescended testis, four of which were bilateral, all testes were satisfactorily brought down into the scrotum. In the ten patients returning for follow-up examinations, all showed a growth of the testis proper for the age of the boy. Hernia was encountered in all cases, in several of which there were rather insignificant sacs. In my experience, the operation can be satisfactorily done without sacrifice of any of the blood supply of the testis.

SUMMARY

There are several factors operative in the causation of maldescent of the testis. The most important probably are the many fibrous adhesions to the cord and within the cord which are always present. Proper division and dissection of these strands, and the freeing of the cord within the internal abdominal ring, will permit the testis to be mobilized to a satisfactory level within the scrotum. The total blood supply can and should be conserved. Any severance of the blood vessels to the testis may result in atrophy of greater or lesser degree. Anchoring the testis by any of the several methods is not desirable or necessary. The results in those patients whom I could observe from one to ten years after operation were uniformly good.

25 East Washington Street.

DANGERS ATTENDING INTRASPINAL TREATMENT WITH MERCUROCHROME *

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The history of the development of specific chemotherapy in medicine is well known. Startling discoveries of chemotherapeutic agents that have stood the test of time and experimentation have been rare indeed. Those now available to the medical profession are exceedingly few. The German school has continued this line of investigation with unremitting attention since the time of Ehrlich's discovery of the spirocheticidal action of arsphenamine, though elsewhere throughout the world there has been a general lack of interest except on the part of a few investigators.

In the United States, the therapeutic effect of various dyestuffs has been studied in recent years. We shall not attempt here to review the studies that have been made with this type of chemotherapy. The reports are ponderous, and if one were to draw a general conclusion from them it would be that the significant thing about them is the great variation in the results that have been obtained in the hands of different investigators. A few of the more recent reports, however, have been of interest to us. Trout [1] has observed the inadequacy of mercurochrome-220 soluble in the

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1. Trout, H. H.: Surg. Gynec. Obst. 42:633 (May) 1926.

treatment of streptococcus infections, even when massive or small repeated doses of the drug were given. Hengstler [2] has reported that mercurochrome is valueless in the treatment of meningitis. Lowenburg [3] treated a case of tuberculous meningitis intraspinally, and attributes the death of the patient to the injection. Simmons [4] has recently reported in well controlled experiments in rabbits that the intravenous use of mercurochrome-220 soluble and a mixture of acriflavine and gentian violet did not offer promise of beneficial results in the treatment of bacterial infections. Eggerth [5] has shown that the use of acriflavine in streptococcus pleural infections is practically without value.

For all of these negative results one might find other reports of positive results to offset them. It is on account of this great variation in the literature that the dyestuffs continue to be used here and there in many cases of infectious disease. True, in many instances, such chemotherapy is used only as a "last resort." The patient is dying, all other treatment has been without avail, and on the "chance" that chemotherapy may aid, the patient is given the benefit of a doubt.

Results of Intraspinal Injections of Mercurochrome in Rabbits

Rabbit	Dose of Mercurochrome per Kilogram of Body Weight, Mg.	Amount Injected Intraspinally, Mg.	Results
5738	5	12	Convulsions and death in 1 minute
5722	2	4.8	Convulsions and death in 1 minute
5725	1	2.4	Convulsions and death in 1 minute
5322	0.2	0.5	Convulsions and death in 5 minutes
3993	0.2	0.48	Convulsions and death in 10 minutes
3968	0.2	0.48	Convulsions and death in 10 minutes
5716	0.1	0.24	Convulsions and death after an hour and a half
3953	0.4	0.1	Convulsions; animal was killed after 20 minutes
5742	5*	12*	Not any reaction

*Intravenous.

It is because of this general situation that we wish to call attention to the dangers attending the intraspinal administration of mercurochrome-220 soluble. Quite incidental in the course of our study on experimental encephalitis in rabbits, we have found that this chemotherapeutic agent is extremely toxic for the nervous system. According to various reports in the literature, doses as high as 5 mg. of mercurochrome per kilogram of body weight may be used intravenously in rabbits without untoward results. It will be noted in the accompanying table that convulsions and death follow the intraspinal injection of 2.4, 4.8 and 12 mg., respectively, in normal rabbits of 2.5 Kg. within one minute following the injection. The largest of these doses (12 mg.) did not produce any reaction when given intravenously. Five-tenths milligram of mercurochrome injected intraspinally into a normal rabbit produced convulsions and death of the animal within ten minutes, and half of this dose (0.24 mg.) when given intraspinally produced convulsions within a few minutes, and the animal lived for an hour and a half.

It appears from these experiments that the introduction of mercurochrome intraspinally is followed by grave consequences, even when doses far less than a therapeutic dose are administered. For this reason we have considered these observations of sufficient importance to make them the subject of this short report.

437 West Fifty-Ninth Street.

2. Hengstler, W. H.: Minnesota Med. **9**: 240 (May) 1926.
3. Lowenburg, Harry: Arch. Pediat. **43**: 244 (April) 1926.
4. Simmons, J. S.: J. Infect. Dis. **39**: 273 (Oct.) 1926.
5. Eggerth, A. H.: J. Infect. Dis. **38**: 440 (May) 1926.

SEASONAL INCIDENCE OF HEMOLYTIC STREPTOCOCCUS IN THE NOSE AND THROAT

IN A SURGICAL OPERATING PERSONNEL; SIGNIFICANCE OF MASKING DURING OPERATION *

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A series of severe hemolytic streptococcus operative wound infections in clean cases in the Presbyterian Hospital two years ago led to an investigation of the possible sources of the organism in question. The result of this investigation has been reported.[1] In the course of this study, it was demonstrated by reciprocal agglutination and reciprocal absorption of agglutinin tests that a culture taken from one of these infected wounds yielded a hemolytic streptococcus identical with an organism obtained from a culture taken of the nose of the instrument nurse who assisted at the operation. The two cultures were of such a rare type of hemolytic streptococcus that there can be little question that they were one and the same strain and that the wound had been contaminated from that source. Cultures taken from the throats of all the members of the operating force at that time revealed the surprising fact that 33 per cent of these persons harbored hemolytic streptococci in their throats. A number of these carried them in the nose as well. This obviously demanded the strictest masking of both nose and mouth by all members of the operating teams.

It was thought worth while to make a study of the seasonal incidence of hemolytic streptococci in the nose and throat throughout the following year to give some warning of what might be expected if masking were not done. As the masking, as subsequently practiced, was found to prevent the expulsion of organisms from the nose and mouth, a correlation could not be made with hemolytic streptococcus wound infections during the period of masking. It was not assumed that the curve of incidence would be the same from year to year but it was thought that a rough comparison might be made between the incidence of the organism of one year and wound infections of the previous year, while the absence of wound infections during the period of masking would be of considerable significance.

TECHNIC

Organisms are expelled from the mouth during speaking and from the nose during expiration. From the mouth they are doubtless contained in droplets of mucus from any part of the surface of the mouth or throat and with coughing from the larynx or even the trachea. From the nose, organisms may be discharged with droplets in the same manner, or, if dry, during expiration

* From the department of surgery, Columbia University College of Physicians and Surgeons, and the Presbyterian Hospital

1. Meleney, F. L., and Stevens, F. A.: Postoperative Hemolytic Streptococcus Wound Infections and Their Relation to Hemolytic Streptococcus Carriers Among the Operating Personnel, Surg. Gynec. Obst. **43**: 338-342 (Sept.) 1926.

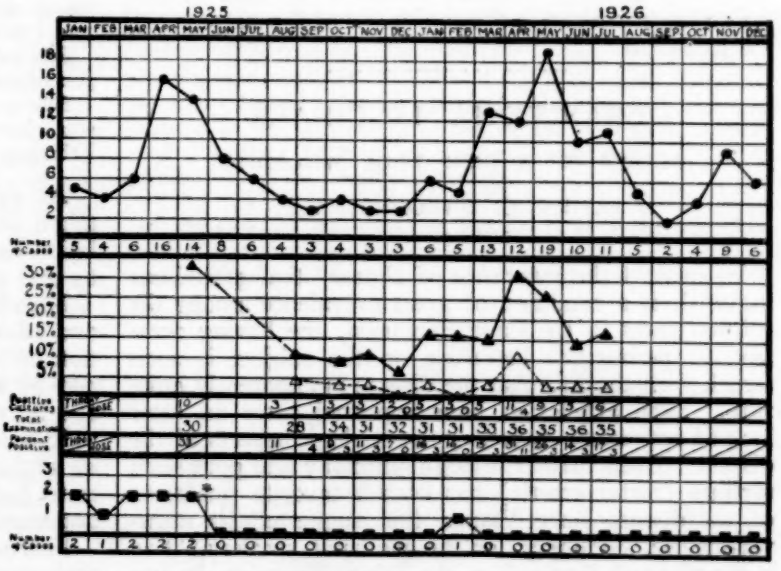
they may be blown off the hairs just inside the nasal orifices. For these reasons, in taking cultures from the throat, no attempt was made to penetrate into the crypts of the tonsils as Bloomfield and Felty [2] did in their study of throats for the presence of hemolytic streptococci. A cotton swab was passed into the mouth and rubbed over the fauces, tonsils and pharynx, and immediately spread over the surface of a blood agar plate. In taking cultures of the nose, no attempt was made to avoid the contact of the swab with the nasal hairs. It was passed into the nasal cavity as far as possible, contact made with septum and turbinates and then withdrawn. The mucus was then likewise spread over the surface of a blood agar plate. After twenty hours' incubation, the plates were examined and all hemolytic colonies fished and plated again. Single hemolytic colonies were then planted into broth and identified. Cultures were taken once a month from all the available operating staff, surgeons, nurses, anesthetists and orderlies. This number varied slightly from month to month, from twenty-eight to thirty-six, because of the absence of a few individuals during the period of each examination. Cultures were taken from the attending surgeons, the regular instrument nurses and anesthetists throughout the year. Interns, pupil nurses and orderlies were transient and were examined for periods of from one to four months. Altogether, 362 examinations were made on 125 different individuals. Although the positive cultures probably did not represent the total incidence of hemolytic streptococci, the method of taking the specimens probably yielded positive results in almost all those persons who were likely to discharge hemolytic streptococci when speaking or breathing, and the figures represent roughly the potential source of wound contamination from unmasked noses and mouths.

RESULTS

The central portion of the accompanying chart shows the curve of incidence of hemolytic streptococci in the nose and throat of the operating personnel from August, 1925, to July, 1926. August and September are combined because one complete examination was made on August 31 and September 1, while in subsequent months the examinations were made during the last week of the month. The outstanding feature of the curve is the plateau in the late winter and early spring and the peak in April and May. The percentage of positive throat cultures in April, 1926, was almost identical with that in May, 1925.

Aside from the features brought out by the composite curve, the incidence of hemolytic streptococci in individuals over a period of time is of considerable interest. Of 125 persons examined, positive cultures were present in twenty-seven at one time or another. The incidence was very much higher in the surgeons than in the operating room nurses. This may be due to their closer contact with more patients. Cultures from nineteen of fifty-three physicians were positive, while only eight of seventy-two nurses carried the organism. Twenty-two of the twenty-seven who had positive cultures were examined more than once. Of these, twelve had positive cultures on two or more successive examinations. One physician had a positive throat culture for seven consecutive months without symptoms; another gave a positive culture in four out of five, another in four out of six, and still another in five out of six examinations.

The lowest curve in the chart shows the incidence of wound infections with the hemolytic streptococcus during the years 1925 and 1926. The high incidence in the first five months of 1925 is striking. In May, 1925, when it was found that hemolytic streptococci were present in a large percentage of throats and in the noses of certain members of the operating staff, rigid masking of both nose and mouth was ordered. Thereafter for eight months not a single wound infection with the hemolytic streptococcus occurred, but in February, 1926, there was a single fatal case of streptococcus meningitis following craniotomy. The opportunity of studying the source of this infection was lost. However, as an added precaution, the unsterile nurses, the operating room orderlies and all other persons entering the operating room were required to mask. No other hemolytic streptococcus wound infections occurred, although the incidence of this organism, both in nose and throat cultures and in all types of infectious lesions in patients, ran high in the late winter and spring months as the chart graphically shows.



Incidence of hemolytic streptococcus: upper curve, all types of lesions in patients in surgical wards; middle curve, in nose and throat of operating personnel; lower curve, in operative wound infections; after the time indicated by the asterisk, complete masking was instituted.

In the upper portion of the chart is a curve giving the total number of patients with all types of hemolytic streptococcus lesions cared for on the surgical wards. These figures were obtained from the records of the bacteriologic laboratory of the hospital. This number is fairly complete, for great pains have been taken to obtain cultures in every case of infection treated in the surgical service. The peaks in the spring months of both 1925 and 1926 are most striking, and roughly correspond to the peak in the incidence of nose and throat infection in 1926. A decade ago, in this clinic, the peaks in the curves for postoperative pneumonia came somewhat earlier in the year.[3]

COMMENT AND SUMMARY

The results of this study are of value in demonstrating, in the nose and throat of the operating personnel, a

2. Bloomfield, A. L., and Felty, A. R.: Definition of Hemolytic Streptococcus Parasitism in the Upper Air Passages of Healthy People, Arch. Int. Med. **32**: 386 (Sept.) 1923.

3. Whipple, A. O.: A Study of Postoperative Pneumonitis, Surg. Gynec. Obst. **26**: 29-47 (Jan.) 1918.

potential source of organisms that may produce wound infections. In our clinic the danger from this source varied from time to time during 1926, but in general was greatest in the late winter and spring months. When adequate masking was practiced by every person entering the operating room, including operators and sterile assistants, unsterile nurses, orderlies and visitors, infections with the hemolytic streptococcus were reduced to a minimum, even though positive cultures from the nose and throat of the operating personnel and from general surgical infections had their usual high incidence in the late spring months. While complete masking is advocated as an important feature of operating room technic, uncovered noses and throats are not considered by any means to be the only source of wound contamination. We believe, however, that they are dangerous sources which are frequently overlooked.

It cannot be too often reiterated that in every operating room all the sources of wound contamination must be reduced to a minimum, and that this requires the most vigilant observation of every phase of the sterilizing processes and the constant utilization of that "sterile sense" so important in the equipment of the surgeon and his assistants.

GRANULOMA INGUINALE

REPORT OF A CASE FROM WISCONSIN

JAMES C. SARGENT, M.D.
MILWAUKEE

In spite of the assurance of Fraser [1] that granuloma inguinale is a condition of great prevalence among the colored races in the Cape Peninsula, one having occasion to peruse the literature on the subject is soon struck with the fact that the disease is apparently quite rare. Such articles as have appeared show an utter lack of agreement regarding the etiologic aspects of the disease. Even further, though antimony and potassium tartrate (tartar emetic) has been a favorite treatment of the disease since Vianna first suggested its intravenous use, Weinberg,[2] on the one hand, speaks of it as a specific and Fraser,[1] on the other, describes its use as accompanied by much failure and disappointment.

Without other excuse than the very chaos of the subject, the case reported here is presented in the hope that it will in time prove to be a small part of the basis for a final understanding of the disease. There are two minor points of clinical interest regarding this case. To begin with, it is the first case reported as occurring in Wisconsin, and should serve to call attention to the fact that those of us of the Northern states must keep it in mind as a possibility. The other point is a mere reiteration of the old caution that neoplasm and granulation tissue are sometimes differentiated with the greatest difficulty even on section. This patient lay in the hospital ward with a diagnosis of cancer of the penis with metastasis in the groin for two months. On two occasions, sections were taken from both the penile sore and the lesion in the groin. A very competent pathologist insisted that the sections were from carcinomatous tissue and, reinforced by the counsel of colleagues, maintained his contention until unmistakable healing had begun to result from treatment. A third biopsy was made after treatment had been begun, and sections carefully cut perpendicular to the skin surface disclosed the true structure of the lesion.

1. Fraser, A. R.: J. Urol. **13**: 227 (Feb.) 1925.
2. Weinberg, M.: J. Urol. **9**: 505 (June) 1923.

Cancer in negroes was known to be uncommon. Cancer of the penis, especially in a negro, was known to be exceedingly rare. A cancer of the penis in a negro boy of only 18 years was considered far more improbable than granuloma inguinale and, in spite of the pathologist's report, the diagnosis was made and treatment begun.

REPORT OF CASE

W. J., a negro, aged 18, without any particular occupation or address, but having been in Milwaukee for the preceding eight months, entered the Milwaukee County Hospital, Dec. 21, 1926, with a sore on the penis of two and a half months' duration, which had been accompanied by a larger sore in the right groin for two months. The general health had been excellent and, except for the lesions noted, the history and physical examination were thoroughly negative. The intern's entrance diagnosis was chancroid with bubo.

The usual local antiseptics applied for ten days failed to influence the lesions. A routine Wassermann test was reported ++++. Six weekly injections of intravenous arsenicals left the lesions unaltered.

A biopsy section from the lesion in the groin taken, January 20, was reported as squamous cell epithelioma. A second biopsy section taken, February 6, included both lesions and was reported as squamous cell epithelioma.

February 16, 1 cc. of 1 per cent solution of antimony and potassium tartrate was given intravenously.

February 19, 4 cc. of 1 per cent solution of antimony and potassium tartrate was given intravenously; February 22, 6 cc.; February 24, 8 cc., and February 26, 10 cc.

At this time healing was evident. Sections were taken from both lesions and were reported as granulation tissue, and the laboratory diagnosis was changed to that of granuloma inguinale.

March 1, 4, 9, 13, 17, 25 and 28, and April 2, 7 and 12, the patient received 10 cc. of 1 per cent solution of antimony and potassium tartrate intravenously, and by that time both lesions were completely healed and he was discharged from the hospital.

It will be noted that a total of a little more than 20 grains (1.3 Gm.) of antimony and potassium tartrate had been given intravenously without the least untoward effects.

February 6, just three weeks after treatment with antimony and potassium tartrate had been started, and at a time when both lesions were about half healed, direct smears and cultures were taken by Dr. John Grill of the department of pathology and bacteriology of Marquette University School of Medicine. In the direct smears stained both with the Gram stain and Giemsa stain, several large mononuclear cells were found with cell inclusions thought to be similar to those described by many authors as Donovan bodies.

A number of cultures were taken from the depth of the lesion on the groin. All cultures were grown on Sabouraud's agar tubes and incubated at room temperature to avoid contaminating growth.

Growth was very slow, the colonies being well developed on the fourteenth day. They were the size of a pinhead, whitish, round, with sharp elevated edges and when old (4 weeks), they assumed a yellowish tint. Transplantation to the same culture mediums showed some acceleration of growth, but after six transplantations the culture died out.

Subcultures were made. Bouillon became cloudy with a fine precipitate. Glucose agar did not show gas formation. Acid production was not noted on litmus lactose agar, litmus maltose agar, or litmus saccharose agar.

The organism studied microscopically was found to be a non-motile, non-spore forming, non-capsule pro-

ducing, gram-negative bacillus, with a suggestion of formation of polar bodies.

Three male guinea-pigs were inoculated with the organism on the scarified glans penis, and after nine weeks pathologic changes were not noted.

308 Wells Building.

Clinical Notes, Suggestions and New Instruments

BILATERAL DIAPHRAGMATIC PLEURISY SIMULATING PERFORATED GASTRIC ULCER

GEORGE L. CARRINGTON, M.D. DURHAM, N. C.

Occasionally, in a child, a respiratory infection beginning on the right side with referred pain has been mistaken by some surgeon for appendicitis and operation has been performed. Less often it has occurred with the adult. Seldom does a respiratory infection masquerade under symptoms suggestive of a perforated abdominal viscus. In the case here reported, however, the abdomen was explored with a preoperative diagnosis of perforated gastric or duodenal ulcer; ten days later a postoperative diagnosis of bilateral diaphragmatic pleurisy was established.

REPORT OF CASE

B. O. V., a white man, aged 50, a clothing salesman, and married, gave a negative family history, except for the facts that his father before death had had frequent attacks of both gallstone and kidney colic; one of his sisters had been operated on for gallstones, and another sister had frequent attacks of indigestion. The patient gave a history of much trouble with indigestion. He had taken sodium bicarbonate and "Bromo-Seltzer" practically every day for several months to relieve the gastric distress. He had been married three times, the first two wives dying, respectively, of pulmonary and of intestinal tuberculosis.

On the night of December 9 his back hurt him a little, but he soon went to sleep and slept well. The next day he felt all right and worked as usual. He did not have symptoms of a cold. That night, December 10, he ate supper and afterward went to the toilet, where he thought that a spider bit him. Two hours after eating, he began to have pains across the back and epigastrium. They rapidly increased in severity. He eructated much gas and vomited several times. The most severe pains were across the back. He had a slight feeling of constriction across the front of the chest.

When I saw him he was writhing and groaning with pain. This appearance of extreme distress was most striking. He felt that he could not live. The abdomen was boardlike. After he had received three-fourths grain (0.05 Gm.) of morphine and a half grain (0.03 Gm.) of codeine his distress was unabated and his abdomen still rigid as a board. There was no local tenderness, and the localization of the pain was vague. The lungs were clear to percussion and auscultation. The general physical examination was essentially negative except for the rigidity of the abdomen. Peristalsis was slow. The temperature was 98, and the pulse 94. Respirations were slow and irregular, as the patient held his breath because of the pain. The leukocyte count was 7,500; it rose three hours later to 10,000. Urine examination showed a trace of albumin and an occasional red blood cell. Fluoroscopic examination was negative. Roentgen-ray plates of the kidneys and ureters did not reveal any stones. Gastrointestinal roentgenograms did not show filling defects, deformities or escape of the barium.

On account of the rigidity of the abdomen it was decided to perform an exploratory operation with the preoperative diagnosis of probable perforated gastric or duodenal ulcer. This was done under nitrous oxide anesthesia with entirely negative results for the gallbladder and ducts, the appendix, kidneys, stomach, intestines and duodenum. There was no air, gas or fluid in the abdomen. The head of the pancreas was a little firmer than usual. As a result of this and in the absence of any positive symptoms, a cigaret drain was placed to the head of the pancreas.

The day after operation the leukocyte count was 19,000. For the next six days the temperature range was from 99 to 100.2, the respirations from 30 to 48, and the pulse around 120. After December 17, the temperature, pulse and respirations remained normal.

Until December 20, ten days after operation, we were unable at any time to elicit any abnormal sounds in the chest on percussion or auscultation. The respirations, of course, were rapid. December 20, dry pleural friction rubs were heard anteriorly, posteriorly and in the axilla on both sides just above the level of the attachment of the diaphragm. These persisted for about three days and then gradually disappeared. His convalescence thereafter was essentially uneventful.

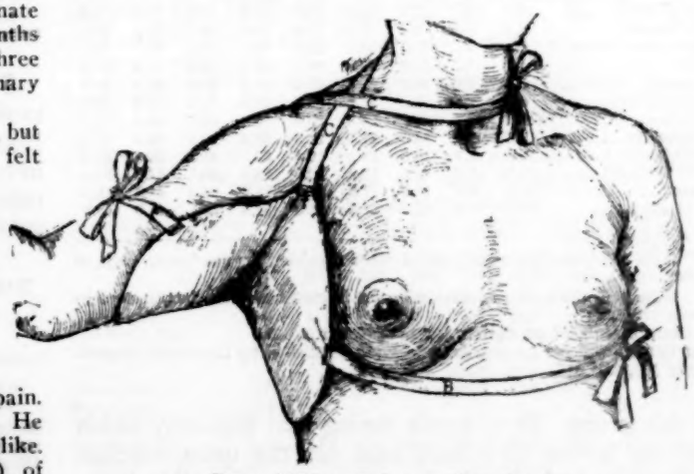
First National Bank Building.

A CONVENIENT AXILLARY DRESSING*

ETHAN FLAGG BUTLER, M.D., SAYRE, PA.

The application of a comfortable axillary dressing seems always to be fraught with difficulty. Either the dressing is incompetent and fails to cover the field properly, or else it is tightly applied by roller bandage or adhesive and with each motion of the shoulder joint the patient experiences discomfort. Axillary furunculosis and other conditions will always create a need for surgical dressings.

From the patient's standpoint, the most comfortable type of dressing, so far observed, can be made from the "dress shield." Borrowing freely from the dressmaker of bygone years (dress shields are not as common, nowadays, as they used to be), one finds, ready-made, a nearly waterproof contrivance admirably shaped to fit the axilla. All that is necessary is to provide the means for securing it in place. This is readily accomplished by sewing six tapes to the shield: two long tapes (*B*) three fourths of the distance from the tips (*T*) to the end of the leaf that approximates to the body; two short tapes (*A*) three fourths of the way from the tips to the end of the leaf that approximates to the arm; two medium length tapes (*C*) to the tips. These tapes tie in pairs—*B* around the chest wall, under the opposite axilla, *A* around the arm, and *C* up over the shoulder, where they are crossed and brought around the neck to the opposite side. Any attempt to tie the last pair above the shoulder on the involved side would be futile; they would slip down over the arm.



Dress shield applied as axillary dressing.

The desired type of dressing is placed in position; the dress shield is applied; the tapes are properly tied, and the patient is assured of a comfortable and competent dressing.

* From the Surgical Service, Robert Packer Hospital.

Special Article

DIPHTHERIA MORTALITY IN LARGE CITIES OF THE UNITED STATES IN 1926

FOURTH ANNUAL REPORT

The fourth annual summary of diphtheria mortality in those cities of the United States having a population of more than 100,000 is here presented.[1] We are indebted to the local health authorities for information regarding the number of deaths from diphtheria. The population estimates are the same as those used in the article on typhoid recently printed.[2] No attempt has been made to adjust the diphtheria rates on the basis of age, sex or racial distribution of the population, although these factors are well known to influence materially the crude rate. Reasons for this decision are given in the second summary.[3]

The New England cities (table 1) had relatively low diphtheria death rates in 1926, as they did in 1925. New Haven easily carries off the palm for both years

TABLE 1.—*Death Rates of Cities in New England States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
New Haven	0.6	1.7	7.1	14.2	14.9	22.7	15.6	54.8	74.5
Cambridge	0.8	5.8	8.9	12.9	23.8	25.3	46.7	71.9	58.0
Springfield, Mass.	4.1	4.2	15.4	24.9	19.1	31.3	29.6	51.3	68.2
Hartford	4.9	3.7	11.9	13.8	25.3	28.1	38.8	47.8	120.9
Lowell	5.3*	3.6	16.7	23.5	20.6	31.0	59.3	44.3	36.4
Bridgeport	6.4†	13.9‡	19.6	23.4	23.3	26.8	34.2	63.9	79.3
Boston	6.9	12.7	20.2	26.3	20.0	26.2	53.7	83.9	112.2
Worcester	7.8	14.6	15.5	14.1	21.3	32.2	16.5	50.3	47.8
Providence	8.0	7.5	15.8	29.3	26.8	30.7	41.2	53.5	55.3
New Bedford	11.1#	7.5	16.5	17.0	20.9	22.6	25.1	53.6	20.0
Lynn	12.5	8.7	17.0	17.8	17.2	21.7	38.0	44.0	49.4
Fall River	13.7	11.6	25.5	23.6	24.0	34.4	50.1	43.8	46.9

* Rate calculated on population figures furnished by the health department: 112,759.

† Rate calculated on population figures furnished by the health department: 170,717.

‡ Rate calculated on figures for population in 1922.

Rate calculated on population figures furnished by the health department: 135,132.

in this group. It is worth noting that this city, which had the lowest diphtheria rate for the quinquennium 1920-1924, had also the lowest average for 1925-1926, whereas Fall River, which had the highest average for 1920-1924, also had the highest average for 1925-1926. Worcester registered a lower rate than for several years. Six of the twelve New England cities report a higher diphtheria mortality in 1926 than in the preceding year, but the great decrease in the rate in Boston (from 12.7 to 6.9) brings down the rate for the group as a whole. This is by far the lowest diphtheria rate ever recorded in the New England metropolis.

The cities in the Middle Atlantic states (table 2) show somewhat greater improvement, eleven of the sixteen cities in this group recording a decline. Reading in particular manifests remarkable improvement, the 1926 rate being only 2.6, as against 11.5 in 1925 and an average of 21.1 for the five-year period 1920-1924. The lowest rate in this group of cities for 1926 is recorded by Syracuse, which had the same distinction in 1925, the highest by Utica, which also held the same relative position in the preceding year. An intensive campaign against diphtheria in Camden and Utica would seem called for. New York City achieves a new low record (8.1), attesting again the success of the measures used in combating diphtheria in that city. Buffalo again makes a particularly good showing in contrast with its relatively high rate in 1920-1924.

TABLE 2.—*Death Rates of Cities in Middle Atlantic States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Syracuse	1.6	2.7	22.9	12.9	16.6	17.4	17.7	31.1	55.4
Trenton	2.2	6.1	7.3	8.8	12.3	15.8	23.6	92.7*	89.7*
Reading, Pa.	2.6	11.5	21.1	16.9	35.7	29.2	70.1	72.0	91.1
Newark, N. J.	4.6	9.3	9.7	14.6	23.3	30.1	46.7	79.1	92.2*
Albany	4.9	7.6	12.8	10.4	20.0	31.6	26.9	....	....
Buffalo	5.3	5.8	24.0	27.3	22.0	18.4	24.8	53.3	60.9
Paterson	5.6	4.9	18.5	13.5	16.1	25.5	52.9	111.8	145.4
Scranton	7.7	13.4	12.3	22.1	23.4	....	....	77.8*	48.6*
New York	8.1	10.8†	14.0	21.8	28.0	40.0	58.0	85.8	134.4
Pittsburgh	9.3	9.2	20.1	22.3	29.3	20.4	36.9	32.9	86.4
Rochester	9.7	16.4	16.9	12.7	22.1	32.4	32.3	45.9	96.6
Jersey City	10.1	13.6	18.4	21.0	23.2	32.6	57.9	85.4	108.6
Yonkers	12.9	9.7	17.0	17.7	25.3	....	....	....	....
Philadelphia	13.5	15.9	16.7	22.7	24.6	34.1	50.0	100.6	119.4
Camden	21.0	21.0	20.3	23.2	38.8	48.9	52.6	100.3*	194.0*
Utica	29.2	22.6	....	....	....	....	....	....	....

* Diphtheria deaths from Chapin's Municipal Sanitation.

† Rate calculated on figures for population in 1924, with same annual increment added as in 1922-1923, 1923-1924.

The South Atlantic cities (table 3) on the whole rank well, although there was a slight increase in Norfolk and Baltimore and a more considerable one in Atlanta. Richmond reports the remarkably low rate of 1.1. Washington and Wilmington record substantial decreases over the preceding year.

TABLE 3.—*Death Rates of Cities in South Atlantic States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Richmond	1.1	16.1	9.8*	5.8	7.0	9.8	24.4	17.6	59.7
Norfolk	1.7	1.0†	4.3	4.1	6.7	....	....	....	....
Washington	5.5	7.4	10.5	11.9	6.9	11.2	23.5	50.9	77.9
Jacksonville	5.8	....	....	....	....	....	....	....	....
Baltimore	7.3	6.0	11.4	13.5	14.2	16.1	33.0	68.1	70.0
Wilmington	9.7	20.2	11.6	15.2	18.0	27.8	50.9	84.9	83.8
Atlanta	10.9‡	4.4#	13.3	10.1	12.5	14.2	11.1	10.5	8.8

* The rate for Richmond was erroneously given as 2.2 in the diphtheria survey for 1924; the correct figure of 12.0 is used here.

† Rate calculated on figures for population in 1924, with the same annual increment added as in 1922-1923, 1923-1924.

‡ Rate calculated on population figures furnished by the health department: 266,488.

Rate calculated on population figures furnished by the health department: 250,000.

In the East North Central states (table 4), two cities (Youngstown and Canton) report rates under 2. Chicago again reports a low rate (7.3). Several cities in this group seem to have suffered from special epidemic prevalence, notably Columbus, Cleveland and, above all others, Detroit. The extraordinary outbreak in the latter city deserves the attention of epidemiologists. The increase in cases apparently began early in May, and the number rose steadily, so that the Detroit

1. The preceding articles were published Sept. 20, 1924; April 25, 1925, and April 3, 1926.

2. Typhoid in the Large Cities of the United States in 1926, J. A. M. A. **88**: 1148 (April 9) 1927.

3. Diphtheria Mortality in the Large Cities of the United States in 1924, J. A. M. A. **84**: 1269 (April 25) 1925.

Weekly Health Review, June 26, pointed out the unusual circumstance that at that time there were more cases of diphtheria in the city than at any preceding period of the year. The disease remained high and especially virulent throughout the summer and fall, and it was not until the week ended December 18 that the number of cases dropped below the norm. A very active campaign for diphtheria prevention was waged all through the autumn months, and it was estimated that by December 4 more than 53 per cent of the most susceptible age group (between 6 months and 10 years of age) had either received the toxin-antitoxin immunization or were undergoing treatment. The decline in the number of cases that occurred in December may have been due to the energetic measures of the health department. It seems probable that the best resources of modern preventive medicine were utilized in the Detroit campaign. In spite of the early recognition of the situation and the active prosecution of preventive measures, however, the Detroit rate was forced up to as high a figure as 34.8. This occurrence may shock our complacence about the diminution of diphtheria mortality in recent years. The question will undoubtedly be asked whether this evidence of the occurrence and persistence of diphtheria of a virulent type may not justify the attribution of a part at least of the decline in diphtheria mortality to a change in the type of the disease such as has been witnessed in scarlet fever and some other infections. At all events, we are hardly warranted in assuming that diphtheria mortality will continue to pursue uninterruptedly the downward course that it has been taking. It is to be hoped that careful bacteriologic studies were made during the course of the Detroit epidemic and that further information will be forthcoming.

The four cities in the East South Central states (table 5) show considerable divergence. Louisville and Birmingham had lower rates in 1926 than in 1925. Memphis, which in 1925 had a low rate, reverts in 1926 to its 1920-1924 average. Nashville evidently suffered from a rather severe epidemic, the diphtheria mortality rate exceeding all the five-year averages since 1900.

The West North Central cities (table 6) again show for the most part relatively low diphtheria rates, the reduction in Omaha being especially marked. Minneapolis, which had the highest diphtheria rate in the

TABLE 4.—*Death Rates of Cities in East North Central States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Youngstown	0.6	5.0	18.5	11.9	40.5	33.5	28.0	17.6	....
Canton	1.8	5.6	....	....	....	....	....	....	....
Akron	3.0*	2.4†	10.4	18.9	27.8	....	....	....	....
Flint	3.1	3.8	....	....	....	....	....	....	....
Grand Rapids	3.2	4.5	19.6	13.5	20.0	25.6	17.2	32.4	99.2
Cincinnati	4.4	3.4	10.6	13.2	13.9	17.0	17.3	37.3	103.7
Indianapolis	6.0	6.7	11.7	21.4	13.5	13.3	15.9	36.4‡	97.3#
Chicago	7.3	8.0	17.5	31.2	37.9	27.0	33.9	69.7	117.3
Dayton	7.3	2.9	9.4	9.3	22.1	....	....	38.0‡	116.0‡
Toledo	8.5	9.0	22.4	14.1	25.4	20.4	56.8	34.6	89.3
Milwaukee	9.8	11.6	11.4	19.8	27.8	26.4	22.7	51.7	116.2
Columbus	10.5	3.2	8.5	7.6	12.1	10.5	11.6	....	....
Cleveland	19.9	14.7	14.7	20.0	24.6	20.8	42.6	45.3	95.7
Detroit	34.8	9.5	24.3	32.2	33.3	22.6	38.5	62.9	132.9

* Rate calculated on population figures furnished by the health department: 200,000.
† Rate calculated on population figures for 1924.
‡ Diphtheria deaths from Chapin's Municipal Sanitation.
# Data for 1891-1894.

TABLE 5.—*Death Rates of Cities in East South Central States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Louisville	2.2*	5.0	10.4	9.5	9.0	....	....	39.0†	40.6‡
Birmingham	2.8	5.8	5.3	7.2	8.3	....	....	....	....
Memphis	9.1	2.9	9.5	11.2	11.9	13.4	6.9	10.0	28.5
Nashville	20.4	6.6	8.0	8.9	7.3	10.3	13.9	30.1	28.4

* Data for year Sept. 1, 1925, to Aug. 31, 1926.
† Diphtheria deaths from Chapin's Municipal Sanitation.
‡ Data from 1891-1894; diphtheria deaths from Chapin's Municipal Sanitation.

TABLE 6.—*Death Rates of Cities in West North Central States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Kansas City, Kan.	3.4	4.3	9.8	23.1	12.4*	....	....	....	....
Duluth	3.5	0.0	....	....	....	....	....	....	....
Omaha	4.2	11.8	22.9	35.8	15.8	24.5	20.5	28.2	82.9
Kansas City, Mo.	4.3	7.3	14.4	22.8	15.7*	....	....	....	....
St. Paul	8.1	13.4	17.5	20.7	31.4	31.1	27.9	43.3	75.4
Des Moines	8.2	11.4†	15.1	16.6	15.1	....	....	....	....
St. Louis	13.1	11.2	16.1	24.4	23.7	19.4	43.3	62.9	67.7
Minneapolis	17.3	25.0	13.4	19.9	28.3	24.4	44.6	34.0	55.0

* Data for 1912-1914.
† Rate calculated on figures for population in 1924, with same annual increment added as in 1922-1923, 1923-1924.

TABLE 7.—*Death Rates of Cities in West South Central States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
El Paso	1.8	8.6	20.0	17.6	29.2	....	....	....	....
San Antonio	5.4	4.5	7.7	8.7	6.7	7.6	17.1	20.6	4.4
New Orleans	6.4	6.8	6.5	11.6	19.6	10.2	11.5	17.1	51.3
Tulsa	6.8	17.7	....	....	....	....	....	....	....
Fort Worth	8.8	5.8	1.8*	....	....	....	....	....	....
Houston	11.2†	10.4	6.4	6.1	7.8	10.5	....	....	....
Dallas	11.8	3.6	8.3	7.4	6.9	8.1	16.9	16.0	21.8

* Data for 1924 only.
† Rate calculated on population figures furnished by the health department: 250,000.

TABLE 8.—*Death Rates of Cities in Mountain and Pacific States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Seattle	2.0*	2.5†	6.6	5.5	5.2	12.5	31.8‡	27.2#	....
Los Angeles	6.2¶	6.2¶	14.4	7.1	7.5	15.3	25.4	35.8	46.0
San Francisco	6.4	6.6	23.0	17.0	9.2	15.3§	35.3§	27.0#	52.8#
Oakland	7.3	5.1	18.8	8.1	10.3	16.1	29.1	....	....
Spokane	7.4	14.7	11.3	4.2	7.6	25.8	....	59.5#	18.1‖
Portland	7.6**	13.5	11.3	6.0	12.3	12.2	20.2	....	....
San Diego	10.0	6.6	....	....	....	....	....	....	....
Denver	10.5	15.7	23.2	6.7	10.2	20.8	29.6	27.3	130.2
Salt Lake City	15.1	13.7	12.5	14.5	15.1	34.2	46.0	14.8	56.7§
Tacoma	17.0	18.2	12.4	7.7††	....	....	....	....	....

* Rate calculated on population figures furnished by the health department: 345,000.
† Rate calculated on figures for population in 1924, with same annual increment added as in 1922-1923, 1923-1924.
‡ Data for 1901-1904.
# Diphtheria deaths from Chapin's Municipal Sanitation.
¶ Rate calculated on population figures furnished by the health department: 1,200,000.
§ Data from Crum: Am. J. Pub. Health 7:445 (May) 1917.
‖ Data for 1892-1894.
** Rate calculated on population figures furnished by the health department: 314,795.
†† Data for 1916-1919.

country in 1925 (25.0), shows some reduction, but is still on the list of the ten worst diphtheria cities. The continuance of a relatively high rate in St. Louis is somewhat unexpected, especially when geographic location is taken into account.

The cities in the West South Central states (table 7) have not for the most part shown much diphtheria reduction in the past ten years. El Paso is an exception, the rates for 1925 and 1926 being very much lower than those previously recorded. San Antonio also shows some tendency toward improvement. Dallas and Houston, however, seem to have made little progress in the eradication of diphtheria during a twenty-year period.

TABLE 9.—*Ten Cities with Highest Diphtheria Death Rates for 1926*

Detroit	34.8	Minneapolis	17.3
Utica	29.2	Tacoma	17.0
Camden	26.0	Salt Lake City	15.1
Nashville	20.4	Fall River	13.7
Cleveland	19.9	Philadelphia	13.5

TABLE 10.—*Ten Cities with Lowest Diphtheria Death Rates for 1926*

New Haven	0.6	Norfolk	1.7
Youngstown	0.6	Canton	1.8
Cambridge	0.8	El Paso	1.8
Richmond	1.1	Seattle	2.0
Syracuse	1.6	Louisville	2.2

TABLE 11.—*Number of Cities with Various Diphtheria Death Rates*

	40 and Over	20 and Over	10 and Over	Under 10
1890-1894	50	50	52	2
1895-1899	33	49	56	0
1900-1904	18	43	55	1
1905-1909	2	36	55	3
1910-1914	1	34	53	13
1915-1919	0	22	52	18
1920-1924	0	13	52	18
1925	0	4	28	49
1926	0	4	21	57

TABLE 12.—*Total Diphtheria Rate for Seventy Cities, 1923-1926* *

	Population	Diphtheria Deaths	Diphtheria Death Rate per 100,000
1923	29,243,128	3,838	13.12
1924	29,810,993	3,285	11.05
1924	31,049,595	3,024	9.74
1926	31,486,891	2,988	9.48

* The following eight cities are omitted from this summary because data for the full period are not available: Canton, Duluth, Flint, Fort Worth, Jacksonville, San Diego, Tulsa, Utica.

The cities in the Mountain and Pacific states (table 8) do not present striking features. Seattle, Los Angeles and San Francisco record rates almost identical with those of 1925, continuing their good record since 1924. Salt Lake City, Tacoma and Denver exhibit a persistence of the high rates they have had since 1920. For several decades the rate in Salt Lake City has been relatively high. An intensive campaign would probably be of service in this community.

Of the ten cities that had the highest diphtheria death rates in 1925, four—Utica, Camden, Minneapolis and Tacoma—appear on the similar list in 1926 (table 9), and four cities also that were among the ten lowest in 1925—Norfolk, New Haven, Syracuse and Seattle—appear on the low list in 1926 (table 10). In 1925, twenty-eight of the cities had diphtheria death rates of 10 and over; in 1926 there were only twenty-one (table 11). The diphtheria rate for the total population of the seventy cities (table 12) shows a slight decline, from 9.74 to 9.48.

With the exception of the East North Central states, where a marked increase in the diphtheria death rate took place, and the East South Central states, where a lesser increase occurred, most of the geographic divisions showed a notable decline over the preceding year (table 13). This was particularly marked in the New England, Middle Atlantic and West North Central states. The remarkable record of the New England cities indicates either an unusual fluctuation or is evidence of what may be done by preventive measures in overcoming a climatic handicap. It is somewhat disappointing that in the cities in the Southern states, where diphtheria has not in the past been so prevalent as in the North, so little real improvement in the control of this disease is apparently being made.

TABLE 13.—*Total Diphtheria Death Rates According to Geographic Divisions: Seventy-Eight Cities in 1926; Seventy-Seven Cities in 1925*

	Population 1926	Diphtheria Death Rates per 100,000	
		1926	1925*
New England states	2,521,608	6.75	9.25
Middle Atlantic states	11,399,000	9.07	11.48
South Atlantic states	2,226,488	6.38	7.46†
East North Central states	8,117,000	12.84	8.39
East South Central states	836,000	6.82	5.08
West North Central states	2,479,000	10.04	12.50
West South Central states	1,478,000	7.77	7.40
Mountain and Pacific states	3,430,795	7.20	8.19

* Rates are based on population figures used in article Diphtheria Mortality in Large Cities of the United States in 1925.
† Lacks data for Jacksonville.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

MERCURIC SALICYLATE (See New and Nonofficial Remedies, 1926, p. 247).

The following dosage forms have been accepted:

Glaseptic Ampoules Mercury Salicylate-P. D. & Co., 0.065 Gm. (1 grain): Each cubic centimeter contains mercuric salicylate, 0.065 Gm.; apothesine, 0.01 Gm.; in olive oil, 1 cc.

Prepared by Parke, Davis & Co., Detroit.

Glaseptic Ampoules Mercury Salicylate-P. D. & Co., 0.13 Gm. (2 grains): Each cubic centimeter contains mercuric salicylate, 0.13 Gm.; apothesine, 0.01 Gm.; in olive oil, 1 cc.

Prepared by Parke, Davis & Co., Detroit.

MERCURIC SUCCINIMIDE (See New and Nonofficial Remedies, 1926, p. 248).

The following dosage form has been accepted:

Glaseptic Ampoules Mercury Succinimide-P. D. & Co., 0.01 Gm. (⅙ grain): Each cubic centimeter contains mercuric succinimide-N. N. R., 0.01 Gm.; apothesine, 0.005 Gm.; in physiological solution of sodium chloride, 1 cc.

Prepared by Parke, Davis & Co., Detroit.

STATE BOARD STATISTICS FOR 1926

ANNUAL PRESENTATION BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION OF RESULTS OF STATE BOARD EXAMINATIONS

On pages 1400 to 1407 are three tables, A, B and C, giving in detail the results of the various state medical license examinations held during 1926. All state boards sent in reports, and the statistics are complete. The data are presented in the same manner as heretofore. The majority of graduates take the examination in the state in which the college is located, as shown by the dark diagonal zone of figures passing from the upper left to the lower right corner of each table. The marginal numbers enable one to follow readily the line for any college.

Graduates of All Years Examined in 1926

Table A shows the results for all candidates who took the examinations in 1926, regardless of the years in which they graduated. This shows that 5,809 candidates were examined last year, or 147 less than in 1925 but 459 more than in 1924. Since 1906 and until 1919, the expected decrease in the totals examined occurred, owing chiefly to the general reorganization of medical education and, prior to 1919, to the decreasing numbers of students and graduates. Since 1918 there has been a constant increase, except in 1922, when the decrease was due to the small number, 2,529—the war class—that graduated in that year. This year also there is a small decrease of those examined, evidently because of the smaller number of foreign applicants. Of the 5,809 examined in 1926, 467, or 8 per cent, failed, as compared with 552, or 9.3 per cent, in 1925.

There were sixty-eight medical colleges in the United States granting degrees in 1926 which had graduates examined. This is eighty-five less than in 1905, when graduates from 153 medical colleges were examined. The statistics covering schools that have ceased to exist are included in the line for "miscellaneous colleges."

Table 1.—*Foreign Physicians Examined*

Year	Canada			Other Foreign Grads.			Totals		
	Examined	Failed	Per Cent	Examined	Failed	Per Cent	Examined	Failed	Per Cent
1917.....	34	8	23.5	79	37	46.8	113	45	39.8
1918.....	29	10	34.5	45	17	37.8	74	27	36.5
1919.....	71	22	31.0	67	30	44.8	138	52	37.7
1920.....	85	21	24.7	86	33	38.4	171	54	31.6
1921.....	84	20	23.8	178	77	43.2	262	97	33.2
1922.....	73	9	12.3	186	76	40.9	259	85	32.4
1923.....	140	17	12.1	371	165	44.5	511	182	35.6
1924.....	212	14	6.6	591	231	39.1	803	245	30.5
1925.....	319	27	8.5	523	206	39.2	842	232	27.6
1926.....	305	18	5.9	330	134	40.6	635	152	23.9
Totals..	1,352	166	12.4	2,456	1,005	40.9	3,808	1,171	37.5

Applicants Examined from Canada and Abroad

Graduates of Canadian medical schools were examined last year in twenty-seven states. Last year 305 were examined, as compared with 319 in 1925, 212 in 1924 and 140 in 1923. The largest number, eighty-two, were examined in New York, the next largest number being forty-four examined in Michigan. The figures for each college are given so as to show the successes and failures of its graduates at the examinations. Of the 305 candidates examined, eighteen, or 5.9 per cent, failed.

The number of foreign physicians seeking licensure in the United States has steadily increased since the World War, up to 1926. There were 330 examined in 1926 exclusive of those from Canada, as compared with 523 in 1925, 591 in 1924 and 371 in 1923. Of the 330 examined in 1926, 134, or 40.6 per cent, failed. This year, foreign graduates were examined in twenty-nine states, the largest number, 132, being examined in New York, of whom sixty-four, or 48.5 per cent, failed. From all foreign countries, including Canada, 635 candidates were examined, of whom 483 passed and 152, or 23.9 per cent, failed. As shown in table 1, the number of applicants from foreign countries has rapidly increased since the conclusion of the World War. Last year, however, the total was decreased to less than in 1923.

Caution in Forming Conclusions

In making comparisons on the basis of these statistics, the reader must keep in mind (*a*) the number of graduates examined; (*b*) the number of states in which a school's graduates were examined, and (*c*) the character of the board making the examination and the methods employed. Most of the boards refuse to examine graduates of inferior medical colleges, while a few still admit not only graduates of low-grade medical colleges but also osteopaths to the physicians' and surgeons' examination. Some boards in their examinations mark more severely than others, and some include practical laboratory and clinical tests. In forming conclusions based on these statistics, it is particularly important to note for each college the states in which its graduates *are not admitted to examinations*, as set forth in table D. Few state boards now admit graduates of low-grade medical schools to their examinations.

Undergraduates and Osteopaths Examined as Physicians During 1926

For the last ten years, the few undergraduates examined have been accidental or are exceptional instances. In 1926, fourteen undergraduates were examined. Four undergraduates were licensed in Arkansas, two in Colorado, and one each in the district of Columbia, Michigan and Mississippi. Two failed in Colorado, two in Mississippi, and one in Kentucky. In 1906, by contrast, there were 703 undergraduates examined, of whom 342 were licensed. The door is now carefully guarded, therefore, against the licensing of those whose medical training is known to be incomplete. Four boards, however, registered as physicians and surgeons, by examination or reciprocity, eighty-eight graduates of osteopathic colleges, which, if measured by the same standards as medical schools, could be graded only very low in class C, as the teachers, with an occasional rare exception, have not had a training in medicine or in differential diagnosis and, therefore, are not qualified to instruct others in the essentials of the healing art.

The total numbers of undergraduates and graduates of nondescript colleges licensed during the last ten years, from 1917 to 1926 inclusive, are shown in table 2. The largest number examined in any state was 495 in California, even though the returns for 1924 and 1925 from that state are incomplete. The next largest number is in Massachusetts, where 348 were examined, followed by Colorado with 225 and Texas with 24. Of these, the highest failure precentage was in Massachusetts with 50.3, followed by California with 43.6, Colorado with 32.9, and Texas with 29.2. The average failure percentage in all states for this type of candidate was 41.8. Altogether 1,218 were examined, of whom 709 were licensed and 509 were rejected. In brief, every candidate of this type has nearly three chances out of five of securing a license in this country.

In California, prior to 1923, osteopaths in considerable numbers were licensed by the medical board. In November, 1922, a bill passed the legislature authorizing the board of osteopathic examiners, under the medical practice act, to license as physicians and surgeons graduates of osteo-

(CONTINUED ON PAGE 1407)

Marginal Number	NAME OF COLLEGE	1 Alabama P	1 Alabama F	2 Arizona P	2 Arizona F	3 Arkansas P	3 Arkansas F	4 California P	4 California F	5 Colorado P	5 Colorado F	6 Connecticut P	6 Connecticut F	7 Delaware P	7 Delaware F	8 Dist. Columbia P	8 Dist. Columbia F	9 Florida P	9 Florida F	10 Georgia P	10 Georgia F	11 Idaho P	11 Idaho F	12 Illinois P	12 Illinois F	13 Indiana P	13 Indiana F	14 Iowa P	14 Iowa F	15 Kansas P	15 Kansas F	16 Kentucky P	16 Kentucky F	17 Louisiana P	17 Louisiana F	18 Maine P	18 Maine F	19 Maryland P	19 Maryland F	20 Massachusetts P	20 Massachusetts F	21 Michigan P	21 Michigan F	22 Minnesota P	22 Minnesota F
	ARKANSAS																																												
1	University of Arkansas School of Medicine					17	0																			1	0																		
	CALIFORNIA																																												
2	College of Medical Evangelists			1	0			8	2									1	0			1	0	1	0													1	0	1	0				
3	Stanford University School of Medicine							25	0																																				
4	University of California Medical School			1	0			48	0													1	0																			2	0		
	COLORADO																																												
5	University of Colorado School of Medicine							1	0	33	0																			1	0														
	CONNECTICUT																																												
6	Yale University School of Medicine							1	0			21	0					1	0																	3	0			2	0				
	DISTRICT OF COLUMBIA																																												
7	Georgetown University School of Medicine											2	0	1	0	14	0	1	0											1	0									4	0	1	0	3	0
8	George Washington University Medical School							1	0			1	0			25	0							1	1													4	0				1	0	
9	Howard University School of Medicine			1	0							1	0			31	5	5	1	1	0			1	0	1	0			5	0	3	1	1	0			5	1						
	GEORGIA																																												
10	Emory University School of Medicine	7	0															18	1	45	0													1	0					1	0				
11	University of Georgia Medical Department																	10	2	24	0																								
	ILLINOIS																																												
12	Chicago Medical School									1	0													38	7															1	0				
13	Loyola University School of Medicine							4	1					1	0	1	1					1	0	48	3	2	0	1	0			1	0	1	0					2	0	2	0
14	Northwestern University Medical School							8	1	2	0	1	0					3	1					60	2	4	0	7	0	2	0	1	0	1	0					1	0	4	0	6	0
15	Rush Medical College (University of Chicago)	1	0					15	0	2	0							5	1			1	0	97	2	1	0			6	0									1	0	6	0	3	0
16	University of Illinois College of Medicine							10	0	1	0							4	0					92	1			1	0	1	0	2	0									1	0	4	0
	INDIANA																																												
17	Indiana University School of Medicine																	1	1					2	0	67	0			1	0	1	0									1	0		
	IOWA																																												
18	State University of Iowa College of Medicine			1	0					1	0											1	0	2	0			71	0	2	0									1	0	1	0
	KANSAS																																												
19	University of Kansas School of Medicine			1	0			1	0							1	0	1	0											38	0											1	0
	KENTUCKY																																												
20	University of Louisville School of Medicine							3	0									2	0					1	1	1	0					47	0										
	LOUISIANA																																												
21	Tulane University of Louisiana School of Medicine	11	0	1	0			2	0			1	0			1	0	19	0	1	0													54	0			1	0				
	MARYLAND																																												
22	Johns Hopkins University School of Medicine							1	0			1	0			1	0	5	0			1	0							1	0	1	0	2	0	2	0	30	0	2	0	3	0
23	Univ. of Md. School of Med. and Coll. of P. & S.	1	0					0	1							3	0	4	1			1	0															45	0	2	0	1	0		
	MASSACHUSETTS																																												
24	Boston University School of Medicine							1	0			1	0					0	1											1	0					6	0			30	1	1	0		
25	College of Physicians and Surgeons, Boston									1	0																													2	1				
26	Harvard University Medical School	1	0					10	0	1	0	1	0					2	0	1	0			2	1			1	0			1	0			2	0			32	0	3	0	1	0
27	Tufts College Medical School											6	0					1	1					1	0	1	0									8	0			75	7				
28	Middlesex College of Medicine and Surgery																																							17	17				
	MICHIGAN																																												
29	University of Michigan Medical School			2	0			8	0									2	0			1	0																	2	0	104	0	2	0
30	Detroit College of Medicine and Surgery																					1	0																			39	0		
	MINNESOTA																																												
31	University of Minnesota Medical School			1	0			2	0									0	1			1	0																					98	0
	MISSOURI																																												
32	Kansas City College of Medicine and Surgery					2	0			4	2																																
33	Kansas City University of Physicians and Surgeons									5	1																													0	2				
34	St. Louis College of Physicians and Surgeons			0	1	1	0			15	11							2	0																					10	22				
35	St. Louis University School of Medicine							8	0	1	0							3	2					13	0	1	0	2	0	7	0			1	0					1	0			5	0
36	Washington University School of Medicine							3	0									5	1			1	0	3	0			1	0	6	0									2	0	3	0
	NEBRASKA																																												
37	Creighton University College of Medicine							2	0							2	0							1	0			3	0														
38	University of Nebraska College of Medicine			2	0			7	0			1	0					3	0			1	0	3	0															2	0				
	NEW YORK																																												
39	Albany Medical College																	1	0					1	0																				
40	University of Buffalo School of Medicine																	2	0	1	0																					1	0		
41	Columbia University College of Phys. and Surgs.					1	0											3	0																			2	0			2	0	4	0
42	Cornell University Medical College							1	0									1	0					1	0															1	0	1	0		
43	Long Island College Hospital																							1	0																				
44	New York Homeo. Med. Coll. and Flower Hosp.							1	0																																				
45	University and Bellevue Hospital Medical College							1	0									1	0																										
46	Syracuse University College of Medicine							1	0																															1	0				
	OHIO																																												
47	Eclectic Medical College					1	0	1	1									2	0					5	0	5	0			2	0	8	0										
48	University of Cincinnati College of Medicine															1	0	2	0			1	0											1	0							1	0
49	Western Reserve University School of Medicine																																												
50	Ohio State University College of Medicine																																									1	0		
	OKLAHOMA																																												
51	University of Oklahoma School of Medicine																	1	0					0	1															1	0	1	0		
	OREGON																																												
52	University of Oregon Medical School							9	0																																				
	PENNSYLVANIA																																												
53	Hahnemann Medical College and Hosp. of Phila.													3	0	1	0	1	0													1	0										
54	Jefferson Medical College of Philadelphia	1	0					3	0			1	1			1	0	4	1	1	0	1	0	1	0													1	0	2	0	2	0	1	0
55	Temple University School of Medicine			1	0									1	1																									1	0				
56	University of Pennsylvania School of Medicine							4	0							4	0	8	1					3	0			1	0	3	0					2	0	1	0	2	0			3	0
57	Woman's Medical College of Pennsylvania							3	0							1	0																							1	0				
58	University of Pittsburgh School of Medicine																	3	0																										
	SOUTH CAROLINA																																												
59	Medical College of the State of South Carolina	1	0															4	0											1	0													2	0
	TENNESSEE																																												
60	University of Tennessee College of Medicine	3	0			2	0											3	2															4	0			1	0				
61	Meharry Medical College	1	0									0	2			2	2	3	2	2	0			1	4					2	0	1	0	2	0					2	1			1	0
62	Vanderbilt University School of Medicine																	9	2					1	0							2	0	1	0								
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	

P = Passed; F = Failed.

	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Territories and Possessions	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
21			1 0				2 0		19 0				1 0																24	24	0	0.0	5	1
Michigan												1 0		1 0					1 0		1 0			1 0					19	17	2	10.5	10	2
Minnesota		2 0												1 0															29	29	0	0.0	4	3
														1 0													1 0		52	52	0	0.0	5	4
									3 0							1 0										2 0			41	41	0	0.0	6	5
						1 0			23 0			2 0			2 0													56	56	0	0.0	9	6
1 0	3 0		1 0				2 0		19 0						3 0												1 0	53	53	0	0.0	13	7
	1 0				1 0				14 2	5 0		1 0												1 0			1 0	59	56	3	5.1	12	8
		1 0					2 0		13 8	2 0		1 0			5 1					1 0			2 0		1 1			101	83	18	17.8	20	9
									3 0	6 0					1 0		1 0										2 0	86	85	1	1.2	10	10
									3 0																		1 0	40	38	2	5.0	4	11
2 0	2 0																											47	40	7	14.9	3	12
4 0	6 0								1 0			2 0			2 0			2 0	1 0					1 0				78	73	5	6.4	17	13
6 0	3 0	3 0	1 0				2 0		6 0		1 0	2 0	1 0	3 0	3 0			1 0					2 0		5 0		1 0	135	131	4	3.0	26	14
1 0	4 0	7 0	1 0						4 0		2 0	2 0	1 0	4 0		1 0	4 0		1 0					1 0	14 0		2 0	185	182	3	1.6	24	15
		1 0	1 0						2 0					1 0						2 0			2 0		1 0			127	126	1	0.8	16	16
1 0		1 0							4 0			2 0	1 0														1 1	85	83	2	2.4	12	17
1 0	1 0	2 0											1 0				1 0											84	84	0	0.0	11	18
	1 0	1 0		1 0					2 0						2 0													61	61	0	0.0	10	19
		1 0							1 0				1 0	1 0	1 0									2 2				64	61	3	4.7	11	20
	4 0								4 0	7 0					1 0				3 0	1 0								111	111	0	0.0	15	21
3 0					1 0				7 0	1 0					2 0	1 0			2 0	1 0			2 0		3 0		2 0	72	72	0	0.0	23	22
1 0							1 0		24 0	5 0		1 0	1 0		8 0										1 0		1 0	103	101	2	1.9	16	23
1 0							2 0		10 2						2 0	2 0						4 0						64	60	4	6.2	12	24
3 0	1 0			3 0			1 0		9 0	2 0	1 0	4 0	1 0	2 0	3 0	4 0			2 0	1 0				2 0	1 0			4	3	1	25.0	2	25
									28 5			1 0			4 0	5 0								1 0				97	96	1	1.0	28	26
																												144	131	13	9.0	11	27
104 0	2 0																											34	17	17	50.0	1	28
39 0		1 0					1 0		13 2	1 0					6 0										4 0		1 0	150	148	2	1.3	14	29
		1 0							1 0						1 0													43	43	0	0.0	5	30
	1 0	1 0							4 0		4 0				1 0			1 0					1 0		3 0			119	118	1	0.8	13	31
																												8	6	2	25.0	2	32
	2 0	1 0																										8	5	3	37.5	2	33
2 0	3 0	0							3 0			14 0			1 0				2 0									66	31	35	53.0	7	34
	1 0	0							3 0	1 0		2 0		1 0					1 0	1 0	3 0			1 0				129	127	2	1.6	17	35
																					5 0			0 1	1 0	6 0	2 0	84	82	2	2.4	21	36
	1 0	1 1	0 35	0					2 0									4 0										51	50	1	2.0	9	37
	1 0	2 0	57	0				2 0	2 1				1 0		1 0			2 0							2 0		1 0	91	90	1	1.1	17	38
1 0									17 1						2 0	1 0												23	22	1	4.4	5	39
1 0	2 0								40 2						2 0										1 0			49	47	2	4.1	6	40
1 0									64 3	1 0					1 0	1 0					1 0		1 0	1 0				84	81	3	3.6	13	41
				1 0					55 1	1 0		1 0		1 0			1 0							1 0				66	65	1	1.5	11	42
							1 0		94 4																			101	97	4	4.0	4	43
							0 1		40 3																			45	41	4	8.9	3	44
									89 0																			96	96	0	0.0	6	45
									37 1	1 0											1 0			1 0			3 0	41	40	1	2.4	4	46
	1 0																																	
	2 0								8 8			23 0			1 0												1 0	67	58	9	13.4	12	47
										6 0		45 0						1 0						1 0			1 0	62	62	0	0.0	11	48
	1 0	1 0										46 0																46	46	0	0.0	1	49
1 0												76 0			1 0									1 0			1 0	82	82	0	0.0	7	50
	1 0								3 0				38 0		1 0													47	46	1	2.1	8	51
							1 0							33 1																			
																								3 0			1 0	48	47	1	2.1	5	52
1 0	5 0	1 0		1 0			8 0		5 0			2 0			32 0	1 0												55	55	0	0.0	10	53
							14 0		12 1	9 0		3 0			84 0	2 0	2 0		1 0		1 0			9 0				165	162	3	1.8	24	54
	3 0						1 0								39 3																		
	6 0	6 0	1 0	1 0			4 0		13 0	15 0					56 0					1 0				4 0	3 0		1 0	48	44	4	8.3	6	55
									4 3	2 0		2 0			13 0		1 0											139	139	1	0.7	22	56
									4 1	1 0		5 0			39 1									1 0				31	27	3	9.4	8	57
	2 0																											55	53	2	3.6	6	58
									1 1	2 0							35 3											50	46	4	8.0	7	59
	3 0 1 0								5 0	4 0					1 0				39 0	2 0			1 0	1 0				71	69	2	2.8	13	60
	2 0									3 0					1 0		1 0		36 0	3 0			2 0	0 4				83	66	17	20.5	20	61
							0 1		6 1	1 0		1 0			1 0				47 0									73	70	3	4.1	10	62
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						

TABLE A—PHYSICIANS EXAMINED

Marginal Number	NAME OF COLLEGE	1 Alabama P	1 Alabama F	2 Arizona P	2 Arizona F	3 Arkansas P	3 Arkansas F	4 California P	4 California F	5 Colorado P	5 Colorado F	6 Connecticut P	6 Connecticut F	7 Delaware P	7 Delaware F	8 Dist. Columbia P	8 Dist. Columbia F	9 Florida P	9 Florida F	10 Georgia P	10 Georgia F	11 Idaho P	11 Idaho F	12 Illinois P	12 Illinois F	13 Indiana P	13 Indiana F	14 Iowa P	14 Iowa F	15 Kansas P	15 Kansas F	16 Kentucky P	16 Kentucky F	17 Louisiana P	17 Louisiana F	18 Maine P	18 Maine F	19 Maryland P	19 Maryland F	20 Massachusetts P	20 Massachusetts F	21 Michigan P	21 Michigan F	22 Minnesota P	22 Minnesota F
	TEXAS																																												
63	Baylor University College of Medicine							2	0																									3	0										
64	University of Texas School of Medicine							2	0									1	0																										
	VERMONT																																												
65	University of Vermont College of Medicine																	0	2																			1	0	2	0				
	VIRGINIA																																												
66	Medical College of Virginia											1	0			1	0	5	0					1	0									1	0			3	0						
67	University of Virginia Department of Medicine																	6	0					1	0													2	0						
	WISCONSIN																																												
68	Marquette University School of Medicine							2	1															2	0																	1	0		
	PHILIPPINE ISLANDS																																												
69	University of the Philippines, Manila																																												
70	University of St. Thomas, Manila																																												
	CANADA																																												
71	University of Alberta Faculty of Medicine																																												
72	Dalhousie University Faculty of Medicine	1	0																																	1	0	1	0	2	2				
73	Queen's University Faculty of Medicine											2	1					2	0																					1	0				
74	University of Toronto Faculty of Medicine	2	0					1	0					1	0					2	0			1	0															1	0	33	0		
75	University of Western Ontario Medical School							2	0							1	0																							0	1	10	0		
76	McGill University Faculty of Medicine							7	0			2	0					2	0					2	0											8	0	5	0	4	0	8	0	1	0
77	University of Montreal Faculty of Medicine											1	0																							1	1			3	4				
78	Laval University Faculty of Medicine									1	0																									1	2	0	1	0	1				
79	University of Manitoba Faculty of Medicine							2	0									2	0					4	0															1	0	1	0		
80	Foreign Colleges							17	10	4	2	0	2			2	0	2	3					12	11							1	1			2	0	11	11	6	2	3	0
81	Miscellaneous Medical Colleges					1	0	0	2	3	1	1	0			1	0	30	18			0	1	5	5			1	0	2	0	3	2	4	2	2	0	1	0	7	0				
82	Undergraduates and Osteopaths					4	0	47	10	14	10					1	0															0	1							26	35	1	0		
83	Totals by States	30		13		29		304		116		51		8		103		241		78		15		447		84		92		81		80		79		42		108		361		229		13	
84	Totals—Examined—Passed	30		12		29		275		89		45		7		95		196		78		14		408		84		92		81		74		77		39		106		256		221		13	
85	Totals—Examined—Failed	0		1		0		29		27		6		1		8		45		0		1		39		0		0		0		6		2		3		2		105		2			
86	Percentage of Failures	0.0		7.7		0.0		9.5		23.3		11.8		12.5		7.8		18.7		0.0		6.7		8.7		0.0		0.0		0.0		7.5		2.5		7.1		1.9		29.1		0.9		0.0	
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	

P = Passed; F = Failed.

TABLE B—GRADUATES OF 1922 TO 1926, INCLUSIVE

Marginal Number	NAME OF COLLEGE	1 Alabama P	1 Alabama F	2 Arizona P	2 Arizona F	3 Arkansas P	3 Arkansas F	4 California P	4 California F	5 Colorado P	5 Colorado F	6 Connecticut P	6 Connecticut F	7 Delaware P	7 Delaware F	8 Dist. Columbia P	8 Dist. Columbia F	9 Florida P	9 Florida F	10 Georgia P	10 Georgia F	11 Idaho P	11 Idaho F	12 Illinois P	12 Illinois F	13 Indiana P	13 Indiana F	14 Iowa P	14 Iowa F	15 Kansas P	15 Kansas F	16 Kentucky P	16 Kentucky F	17 Louisiana P	17 Louisiana F	18 Maine P	18 Maine F	19 Maryland P	19 Maryland F	20 Massachusetts P	20 Massachusetts F	21 Michigan P	21 Michigan F	22 Minnesota P	22 Minnesota F
	ARKANSAS																																												
1	University of Arkansas School of Medicine					17	0																			1	0																		
	CALIFORNIA																																												
2	College of Medical Evangelists			1	0			8	2									1	0			1	0	1	0													1	0	1	0				
3	Stanford University School of Medicine							25	0																																				
4	University of California Medical School			1	0			48	0													1	0																						
	COLORADO																																												
5	University of Colorado School of Medicine							1	0	33	0																							1	0										
	CONNECTICUT																																												
6	Yale University School of Medicine							1	0			21	0																							3	0			2	0				
	DISTRICT OF COLUMBIA																																												
7	Georgetown University School of Medicine											2	0	1	0	14	0													1	0							4	0	1	0	1	0
8	George Washington University Medical School							1	0			1	0			25	0							1	1													4	0			1	0
9	Howard University School of Medicine			1	0							1	0			31	5	5	0	1	0			1	0	1	0			5	0	3	1	1	0			5	1						
	GEORGIA																																												
10	Emory University School of Medicine	7	0															16	0	45	0													1	0					1	0				
11	University of Georgia Medical Department																	9	2	24	0																								
	ILLINOIS																																												
12	Chicago Medical School									1	0													38	7															1	0				
13	Loyola University School of Medicine							4	1					1	0									48	2	2	0	1	0			1	0	1	0					2	0		
14	Northwestern University Medical School							6	1	2	0	1	0					1	0					60	1	4	0	6	0	2	0	1	0	1	0					4	0		
15	Rush Medical College (University of Chicago)	1	0					13	0	2	0							1	0					96	2	1	0			5	0									5	0		
16	University of Illinois College of Medicine							9	0	1	0													92	1			1	0	1	0	1	0							1	0		
	INDIANA																																												
17	Indiana University School of Medicine																	1	0					2	0	67	0			1	0	1	0							1	0		
	IOWA																																												
18	State University of Iowa College of Medicine			1	0					1	0													2	0			71	0	2	0									1	0		
	KANSAS																																												
19	University of Kansas School of Medicine			1	0			1	0									1	0											38	0												
	KENTUCKY																																												
20	University of Louisville School of Medicine							3	0									2	0							1	0					47	0										
	LOUISIANA																																												
21	Tulane University of Louisiana School of Medicine	11	0	1	0			2	0			1	0					12	0	1	0													54	0			1	0						
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	

P = Passed; F = Failed.

23 Mississippi	24 Missouri	25 Montana	26 Nebraska	27 Nevada	28 New Hampshire	29 New Jersey	30 New Mexico	31 New York	32 North Carolina	33 North Dakota	34 Ohio	35 Oklahoma	36 Oregon	37 Pennsylvania	38 Rhode Island	39 South Carolina	40 South Dakota	41 Tennessee	42 Texas	43 Utah	44 Vermont	45 Virginia	46 Washington	47 West Virginia	48 Wisconsin	49 Wyoming	50 U. S. Territories and Possessions	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F					
								2 1											34 0							1 1		44	42	2	4.5	5	63
						1 0		7 0											64 1									76	75	1	1.3	5	64
								10 1						2 0							25 0							43	40	3	7.0	6	65
								5 0	15 0					1 0	2 0							52 0		14 1			2 0	104	103	1	1.0	13	66
2 0								2 0	2 0			1 0										34 0	1 0	1 0				52	52	0	0.0	9	67
											1 0														52 1			60	58	2	3.3	5	68
																											25 0	25	25	0	0.0	1	69
																											50 0	50	50	0	0.0	1	70
								2 0			1 0												1 0					5	5	0	0.0	4	71
								2 0			2 0										1 0							12	10	2	16.7	7	72
								12 0			4 0		1 0	3 0					1 0					1 0				30	29	1	3.3	10	73
						2 0		28 2			16 0			13 0									2 0					96	94	2	2.1	12	74
								5 1			4 0			2 0									1 0					27	25	2	7.5	8	75
	1 0					4 0		28 2		1 0	3 0			5 0							7 0		4 0				1 0	95	93	2	2.1	18	76
					1 0												3 0											10	5	5	50.0	3	77
										7 0	1 0														1 0		1 0	20	20	0	0.0	9	79
1 0	6 2		1 0			7 6		68 64		0 2	7 2		1 0	13 2	3 4	2 1			9 0	0 1	1 1		1 0	5 3	9 2		2 2	330	198	134	40.6	29	80
1 0	4 0		1 0				0 1	3 3			0 1	1 1	1 0	10 1				2 0	1 1			1 0	0 1				2 1	131	90	41	30.8	30	81
																			3 3									158	97	61	38.6	9	82
2	161	12	101	2	2	63	3	1007	93	18	283	49	53	379	30	48	17	136	129	15	39	96	25	63	107	4	111	5809	....	....	....	....	83
18	158	12	101	2	2	55	2	883	93	16	279	49	51	371	26	44	17	136	124	14	38	96	23	52	104	3	107	....	5342	....	....	....	84
2	3	0	0	0	0	8	1	124	0	2	4	0	2	8	4	4	0	0	5	1	1	0	2	11	3	1	4	....	....	467	....	....	85
10.0	1.9	0.0	0.0	0.0	0.0	12.7	33.3	12.3	0.0	11.1	1.4	0.0	3.8	2.1	13.3	8.3	0.0	0.0	3.9	6.7	2.6	0.0	8.0	17.4	2.8	25.0	3.6	....	....	....	8.0	....	86
23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						

AMINED BY STATE BOARDS DURING 1926

23 Mississippi	24 Missouri	25 Montana	26 Nebraska	27 Nevada	28 New Hampshire	29 New Jersey	30 New Mexico	31 New York	32 North Carolina	33 North Dakota	34 Ohio	35 Oklahoma	36 Oregon	37 Pennsylvania	38 Rhode Island	39 South Carolina	40 South Dakota	41 Tennessee	42 Texas	43 Utah	44 Vermont	45 Virginia	46 Washington	47 West Virginia	48 Wisconsin	49 Wyoming	50 U. S. Territories and Possessions	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F					
						1 0		4 0																				23	23	0	0.0	4	1
													1 0					1 0					1 0					18	16	2	11.1	9	2
													1 0							1 0							1 0	29	29	0	0.0	4	3
								3 0							1 0											2 0		52	52	0	0.0	5	4
					1 0			22 0			2 0			2 0														41	41	0	0.0	6	5
		1 0				2 0		19 0						3 0														54	54	0	0.0	8	6
	1 0					2 0		14 2	5 0		1 0																1 0	49	49	0	0.0	11	7
								13 8	2 0		1 0			5 1					1 0			2 0		1 1			57	54	3	5.3	10	8
								3 0	6 0					1 0		1 0											1 0	100	83	17	17.0	20	9
								3 0																			1 0	82	82	0	0.0	10	10
								1 0			2 0			2 0				1 0										47	40	7	14.9	3	12
						2 0		6 0		1 0	2 0	1 0	3 0	3 0				1 0					2 0	1 0				73	70	3	4.1	15	13
								3 0		2 0	2 0	1 0	3 0				3 0		1 0				2 0		5 0			126	124	2	1.6	24	14
								2 0					1 0						1 0	2 0			2 0	1 0	14 0		2 0	169	167	2	1.2	21	15
								4 0			2 0	1 0												1 0				121	120	1	0.8	15	16
												1 0					1 0											81	81	0	0.0	10	17
								2 0						2 0														82	82	0	0.0	10	18
								1 0				1 0	1 0	1 0										2 2				57	57	0	0.0	8	19
								4 0	7 0									3 0	1 0									62	60	2	3.2	10	20
23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	102	102	0	0.0	13	21

Marginal Number	NAME OF COLLEGE	1 Alabama P	1 Alabama F	2 Arizona P	2 Arizona F	3 Arkansas P	3 Arkansas F	4 California P	4 California F	5 Colorado P	5 Colorado F	6 Connecticut P	6 Connecticut F	7 Delaware P	7 Delaware F	8 Dist. Columbia P	8 Dist. Columbia F	9 Florida P	9 Florida F	10 Georgia P	10 Georgia F	11 Idaho P	11 Idaho F	12 Illinois P	12 Illinois F	13 Indiana P	13 Indiana F	14 Iowa P	14 Iowa F	15 Kansas P	15 Kansas F	16 Kentucky P	16 Kentucky F	17 Louisiana P	17 Louisiana F	18 Maine P	18 Maine F	19 Maryland P	19 Maryland F	20 Massachusetts P	20 Massachusetts F	21 Michigan P	21 Michigan F
	MARYLAND																																										
22	Johns Hopkins University School of Medicine							1	0			1	0			1	0	1	0			1	0							1	0	1	0	2	0			29	0	1	0	2	0
23	Univ. of Md. School of Med. and Coll. of P. & S.	1	0													3	0	1	0			1	0															45	0			1	0
	MASSACHUSETTS																																										
24	Boston University School of Medicine							1	0			1	0																	1	0					6	0			30	1	1	0
25	College of Physicians and Surgeons, Boston									1	0																													2	1		
26	Harvard University Medical School	1	0					9	0	1	0	1	0					1	0	1	0			2	1			1	0			1	0			2	0			28	0	3	0
27	Tufts College Medical School											6	0											1	0	1	0									8	0			74	6		
28	Middlesex College of Medicine and Surgery																																							16	17		
	MICHIGAN																																										
29	University of Michigan Medical School			2	0			8	0									2	0																					2	0	104	0
30	Detroit College of Medicine and Surgery																																									38	0
	MINNESOTA																																										
31	University of Minnesota Medical School			1	0			2	0													1	0																				
	MISSOURI																																										
32	Kansas City College of Medicine and Surgery					2	0			3	2																																
33	Kansas City University of Physicians and Surgeons									5	1																															0	2		
34	St. Louis College of Physicians and Surgeons					1	0			14	8																															9	20		
35	St. Louis University School of Medicine							8	0	1	0							3	0					12	0	1	0	2	0	7	0			1	0					1	0		
36	Washington University School of Medicine							3	0									3	0			1	0	3	0			1	0	6	0											1	0
	NEBRASKA																																										
37	Creighton University College of Medicine							2	0															1	0			3	0														
38	University of Nebraska College of Medicine			2	0			6	0			1	0					3	0			1	0	3	0															1	0		
	NEW YORK																																										
39	Albany Medical College																																										
40	University of Buffalo School of Medicine																	1	0																							1	0		
41	Columbia University College of Phys. and Surgs					1	0																																	1	0	1	0
42	Cornell University Medical College							1	0									1	0					1	0															1	0	1	0
43	Long Island College Hospital																							1	0																		
44	New York Homeo. Med. Coll. and Flower Hosp							1	0																																		
45	University and Bellevue Hospital Medical College							1	0																																		
46	Syracuse University College of Medicine							1	0																															1	0		
	OHIO																																										
47	Eclectic Medical College							1	1									2	0					5	0	5	0			2	0	8	0										
48	University of Cincinnati College of Medicine															1	0	1	0			1	0											1	0							1	0
49	Western Reserve University School of Medicine																																										
50	Ohio State University College of Medicine																																							1	0		
	OKLAHOMA																																										
51	University of Oklahoma School of Medicine																	1	0					0	1																	1	0		
	OREGON																																										
52	University of Oregon Medical School							9	0																																		
	PENNSYLVANIA																																										
53	Hahnemann Medical College and Hosp. of Phila													3	0	1	0	1	0													1	0										
54	Jefferson Medical College of Philadelphia	1	0					3	0			1	0			1	0	3	0	1	0	1	0	1	0											1	0	2	0	2	0	1	9
55	Temple University School of Medicine													1	1																							1	0				
56	University of Pennsylvania School of Medicine							4	0									2	0					3	0			1	0	3	0					2	0	1	0			3	
57	Woman's Medical College of Pennsylvania							3	0																															1	0		
58	University of Pittsburgh School of Medicine																	1	0																								
	SOUTH CAROLINA																																										
59	Medical College of the State of South Carolina	1	0															4	0									1	0														
	TENNESSEE																																										
60	University of Tennessee College of Medicine	3	0			2	0											2	2															4	0			1	0				
61	Meharry Medical College	1	0									0	2			2	2	3	1	2	0			1	1					2	0	1	0	2	0					2	1		
62	Vanderbilt University School of Medicine																	6	0					1	0							1	0									1	
	TEXAS																																										
63	Baylor University College of Medicine							2	0																									3	0								
64	University of Texas School of Medicine							2	0									1	0																								
	VERMONT																																										
65	University of Vermont College of Medicine																																							2	0		
	VIRGINIA																																										
66	Medical College of Virginia															1	0	3	0															1	0			3	0				
67	University of Virginia Department of Medicine																	1	0																			1	0				
	WISCONSIN																																										
68	Marquette University School of Medicine							2	1															2	0																	1	0		
	PHILIPPINE ISLANDS																																										
69	University of the Philippines, Manila																																										
70	University of St. Thomas, Manila																																										
	CANADA																																										
71	University of Alberta Faculty of Medicine																																									1	0		
72	Dalhousie University Faculty of Medicine	1	0																																	1	0	1	0	1	1		
73	Queen's University Faculty of Medicine											2	1															1	0													1	0		
74	University of Toronto Faculty of Medicine	2	0					1	0					1	0					1	0																					18	0		
75	University of Western Ontario Medical School							1	0																																	7	0		
76	McGill University Faculty of Medicine							2	0			2	0					2	0					2	0											7	0	5	0	2	0	5	0
77	University of Montreal Faculty of Medicine											1	0																							1	1			3	4		
78	Laval University Faculty of Medicine																																			0	2	0	1	0	1		
79	University of Manitoba Faculty of Medicine							1	0																																	1	0
80	Foreign Colleges							9	5	1	0	0	1			1	0	1	3					6	1													1	0	5	6	1	0
81	Miscellaneous Medical Colleges																							1	1																		
82	Undergraduates and Osteopaths																																										
83	Totals by States	30		11		23		217		77		47		8		88		107		76		9		406		84		89		78		68		73		34		103		256		295	
84	Totals—Examined—Passed	30		11		23		206		66		43		7		81		99		76		9		387		84		89		78		67		73		31		101		190		285	
85	Totals—Examined—Failed	0		0		0		11		11		4		1		7		8		0		0		19		0		0		0		1		0		3		2		60		0	
86	Percentage of Failures	0.0		0.0		0.0		5.1		14.3		8.5		12.5		8.0		7.5		0.0		0.0		46.8		0.0		0.0		0.0		1.5		0.0		8.8		2.0		22.4		0.0	
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21	

P = Passed; F = Failed.

Marginal Number	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Territories and Possessions						
	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
12		2 0							5 0	1 0					2 0	1 0			1 0	1 0			2 0						56	56	0	0.0	19	22
13							1 0		23 6	5 0		1 0	1 0		8 0										3 0				94	94	0	0.0	13	23
14							2 0		10 2						2 0	1 0						4 0							62	59	3	4.8	11	24
15		2 0		3 0			1 0		8 0	1 0	1 0	2 0	1 0	1 0	2 0	3 0			1 0	1 0						1 0			4	3	1	25.0	2	25
16									27 5						3 0	5 0													80	79	1	1.2	26	26
17																													136	125	11	8.1	8	27
18																													33	16	17	51.5	1	28
19		1 0					1 0		12 1	1 0					6 0										4 0		1 0		147	146	1	0.7	13	29
20			1 0						1 0						1 0														42	42	0	0.0	4	30
21		1 0	1 0						3 0		4 0				1 0			1 0				1 0		3 0				117	117	0	0.0	12	31
22																													7	5	2	28.6	2	32
23																													8	5	3	37.5	2	33
24																			1 0										53	25	28	52.8	4	34
25		61 0	1 0						3 0			14 0			1 0						3 0		1 0					125	125	0	0.0	17	35
26	1 0	34 0							3 0	1 0				1 0					1 0	1 0	5 0			1 0	6 0		2 0	76	76	0	0.0	19	36
27			1 0	35 0					2 0									2 0										46	46	0	0.0	7	37
28		1 0	2 0	57 0				1 0	2 1				1 0		1 0			2 0							2 0		1 0	88	87	1	1.1	17	38
29									17 1							1 0												19	18	1	5.3	1	39
30									40 2						1 0										1 0			46	44	2	4.3	5	40
31									64 3	1 0					1 0		1 0						1 0					74	71	3	4.1	8	41
32				1 0					54 1	1 0		1 0							1 0					1 0				64	63	1	1.6	10	42
33									93 3																			98	95	3	3.1	3	43
34									40 2																			43	41	2	4.7	2	44
35									89 0												1 0				1 0		3 0	95	95	0	0.0	5	45
36									37 1	1 0																		41	40	1	2.4	4	46
37		1 0							8 8			23 0			1 0											1 0		66	57	9	13.6	10	47
38		2 0								6 0		45 0						1 0						1 0				67	61	0	0.0	11	48
39		1 0										46 0												1 0				46	46	0	0.0	1	49
40												76 0			1 0									1 0				81	81	0	0.0	6	50
41									3 0				38 0		1 0													45	44	1	2.2	6	51
42							1 0							33 1										3 0			1 0	48	47	1	2.1	4	52
43				1 0			8 0		5 0			2 0			32 0	1 0					1 0							55	55	0	0.0	10	53
44	1 0						14 0		12 1	9 0		3 0			80 0	1 0	2 0		1 0						9 0			157	156	1	0.6	24	54
45							1 0								38 2												1 0	45	42	3	6.7	5	55
46	3 0	5 0	1 0	1 0			4 0		10 0	15 0					55 0					1 0					3 0	3 0		120	120	0	0.0	19	56
47									4 3	2 0		2 0			13 0		1 0											29	26	3	10.3	7	57
48									3 1	1 0		5 0			39 1										1 0			52	50	2	3.8	6	58
49									1 1	2 0							35 3											49	45	4	8.2	7	59
50	2 0	1 0							4 0	4 0									39 0	2 0			1 0		1 0			68	66	2	2.9	13	60
51		2 0					0 1			3 0		1 1			1 0		1 0		34 0	3 0			2 0		0 3			75	63	12	16.0	20	61
52									5 1	1 0					1 0				47 0									65	64	1	1.5	9	62
53																				34 0								41	41	0	0.0	4	63
54							1 0		7 0											64 1								76	75	1	1.3	5	64
55									10 1						2 0							25 0						40	39	1	2.5	4	65
56	2 0								5 0	15 0					1 0	2 0							52 0		14 1		2 0	100	99	1	1.0	11	66
57									2 0	2 0			1 0										34 0	1 0	1 0			45	45	0	0.0	9	67
58												1 0														51 1		59	57	2	3.4	5	68
59																											25 0	25	25	0	0.0	1	69
60																											48 0	48	48	0	0.0	1	70
61									2 0			1 0												1 0				5	5	0	0.0	4	71
62									2 0			2 0																9	8	1	11.1	6	72
63									9 0			3 0		1 0	3 0										1 0			22	21	1	4.5	8	73
64							2 0		25 2			14 0			12 0									2 0				80	78	2	2.5	10	74
65									2 0			4 0			2 0													16	16	0	0.0	5	75
66		1 0					4 0		27 2			3 0			5 0							6 0		3 0			1 0	80	78	2	2.5	17	76
67											6 0	1 0																10	5	5	50.0	3	77
68																										1 0		4	0	4	100.0	3	78
69																										1 0		10	10	0	0.0	5	79
70		3 1					1 0		27 31		0 1	6 1			6 1	2 2	1 0			5 0		1 1			1 1	2 0		1 0	138	83	55	39.9	23	80
71														1 0														4	3	1	25.0	3	81
72	13	144	1	99	0	1	49	1	894	92	15	270	47	48	346	20	45	11	131	116	14	37	95	16	53	96	2	95	4992					82
73	13	143	1	99	0	1	48	1	812	92	14	268	47	47	341	18	42	11	131	115	14	36	95	16	45	95	2	95		4755				83
74	0	1		0	0	0	1	0	82	0	1	2	0	1	5	2	3	0	0	1	0	1	0	0	8	1	0	0			237			84
75	0.0	0.7	0.0	0.0	0.0	0.0	2.0	0.0	9.3	0.0	6.7	0.7	0.0	2.1	1.4	10.0	6.7	0.0	0.0	0.9	0.0	2.7	0.0	0.0	15.1	1.0	0.0	0.0				4.7		85
76	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						86

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1922–1926					Graduates of 1921 and Previous					Graduates of 1926				
		Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States
	ARKANSAS																				
1	University of Arkansas School of Medicine	24	24	0	0.0	5	23	23	0	0.0	4	1	1	0	0.0	1	19	19	0	0.0	2
	CALIFORNIA																				
2	College of Medical Evangelists	19	17	2	10.5	10	18	16	2	11.1	9	1	1	0	0.0	1	4	4	0	0.0	2
3	Stanford University School of Medicine	29	29	0	0.0	4	29	29	0	0.0	4	0	0	0	0.0	0	27	27	0	0.0	3
4	University of California Medical School	52	52	0	0.0	5	52	52	0	0.0	5	0	0	0	0.0	0	49	49	0	0.0	2
	COLORADO																				
5	University of Colorado School of Medicine	41	41	0	0.0	6	41	41	0	0.0	6	0	0	0	0.0	0	33	33	0	0.0	1
	CONNECTICUT																				
6	Yale University School of Medicine	56	56	0	0.0	9	54	54	0	0.0	8	2	2	0	0.0	2	21	21	0	0.0	3
	DISTRICT OF COLUMBIA																				
7	Georgetown University School of Medicine	53	53	0	0.0	13	49	49	0	0.0	11	4	4	0	0.0	3	30	30	0	0.0	5
8	George Washington University Medical School	59	56	3	5.1	12	57	54	3	5.3	10	2	2	0	0.0	2	36	34	2	5.6	5
9	Howard University School of Medicine	101	83	18	17.8	20	100	83	17	17.0	20	1	0	1	100.0	1	52	45	7	13.5	11
	GEORGIA																				
10	Emory University School of Medicine	86	85	1	1.2	10	82	82	0	0.0	10	4	3	1	25.0	2	68	68	0	0.0	5
11	University of Georgia Medical Department	40	38	2	5.0	4	39	37	2	5.1	4	1	1	0	0.0	1	31	31	0	0.0	4
	ILLINOIS																				
12	Chicago Medical School	47	40	7	4.9	3	47	40	7	14.9	3	0	0	0	0.0	0	41	37	4	9.8	2
13	Loyola University School of Medicine	78	73	5	6.4	17	73	70	3	4.1	15	5	3	2	40.0	4	59	57	2	3.4	9
14	Northwestern University Medical School	135	131	4	3.0	26	126	124	2	1.6	24	9	7	2	22.2	6	99	97	2	2.0	16
15	Rush Medical College (University of Chicago)	185	182	3	1.6	24	169	167	2	1.2	21	16	15	1	6.3	11	105	103	2	1.9	17
16	University of Illinois College of Medicine	127	126	1	0.8	16	121	120	1	0.8	15	6	6	0	0.0	3	108	107	1	0.9	12
	INDIANA																				
17	Indiana University School of Medicine	85	83	2	2.4	12	81	81	0	0.0	10	4	2	2	50.0	2	68	68	0	0.0	5
	IOWA																				
18	State University of Iowa College of Medicine	84	84	0	0.0	11	82	82	0	0.0	10	2	2	0	0.0	2	73	73	0	0.0	3
	KANSAS																				
19	University of Kansas School of Medicine	61	61	0	0.0	10	57	57	0	0.0	8	4	4	0	0.0	3	6	6	0	0.0	2
	KENTUCKY																				
20	University of Louisville School of Medicine	64	61	3	4.7	11	62	60	2	3.2	10	2	1	1	50.0	1	49	49	0	0.0	5
	LOUISIANA																				
21	Tulane University of Louisiana School of Medicine	111	111	0	0.0	15	102	102	0	0.0	13	9	9	0	0.0	3	81	81	0	0.0	9
	MARYLAND																				
22	Johns Hopkins University School of Medicine	72	72	0	0.0	23	56	56	0	0.0	19	16	16	0	0.0	9	22	22	0	0.0	5
23	Univ. of Md. School of Med. and Coll. of P. & S.	103	101	2	1.9	16	94	94	0	0.0	13	9	7	2	22.2	4	66	66	0	0.0	6
	MASSACHUSETTS																				
24	Boston University School of Medicine	64	60	4	6.2	12	62	59	3	4.8	11	2	1	1	50.0	1	34	33	1	2.9	4
25	College of Physicians and Surgeons	4	3	1	25.0	2	4	3	1	25.0	2	0	0	0	0.0	0	3	2	1	33.3	1
26	Harvard University Medical School	97	96	1	1.0	28	80	79	1	1.2	26	17	17	0	0.0	12	21	21	0	0.0	6
27	Tufts College Medical School	144	131	13	9.0	11	136	125	11	8.1	8	8	6	2	25.0	6	86	79	7	8.1	4
28	Middlesex College of Medicine and Surgery	34	17	17	50.0	1	33	16	17	51.5	1	1	1	0	0.0	1	19	13	6	31.6	1
	MICHIGAN																				
29	University of Michigan Medical School	150	148	2	1.3	14	147	146	1	0.7	13	3	2	1	33.3	2	111	110	1	0.9	2
30	Detroit College of Medicine and Surgery	43	43	0	0.0	5	42	42	0	0.0	4	1	1	0	0.0	1	41	41	0	0.0	3
	MINNESOTA																				
31	University of Minnesota Medical School	119	118	1	0.8	13	117	117	0	0.0	12	2	1	1	50.0	2	68	68	0	0.0	3
	MISSOURI																				
32	Kansas City College of Medicine and Surgery	8	6	2	25.0	2	7	5	2	28.6	2	1	1	0	0.0	1	3	2	1	33.3	3
33	Kansas City University of Physicians and Surgeons	8	5	3	37.5	2	8	5	3	37.5	2	0	0	0	0.0	0	4	4	0	0.0	1
34	St. Louis College of Physicians and Surgeons	66	31	35	53.0	7	53	25	28	52.8	4	13	6	7	53.8	6	12	7	5	41.7	3
35	St. Louis University School of Medicine	129	127	2	1.6	17	125	125	0	0.0	17	4	2	2	50.0	3	87	86	1	1.1	9
36	Washington University School of Medicine	84	82	2	2.4	21	76	76	0	0.0	19	8	6	2	25.0	5	43	43	0	0.0	11
	NEBRASKA																				
37	Creighton University College of Medicine	53	52	1	1.9	10	46	46	0	0.0	7	5	4	1	20.0	3	38	38	0	0.0	4
38	University of Nebraska College of Medicine	89	88	1	1.1	16	88	87	1	1.1	17	3	3	0	0.0	3	65	65	0	0.0	6
	NEW YORK																				
39	Albany Medical College	23	22	1	4.4	5	19	18	1	5.3	1	4	4	0	0.0	3	17	16	1	5.9	1
40	University of Buffalo School of Medicine	49	47	2	4.1	6	46	44	2	4.3	5	3	3	0	0.0	3	42	41	1	2.4	3
41	Columbia University College of Phys. and Surgs.	84	81	3	3.6	13	74	71	3	4.1	8	10	10	0	0.0	6	62	60	2	3.2	6
42	Cornell University Medical College	66	65	1	1.5	11	64	63	1	1.6	10	2	2	0	0.0	2	46	45	1	2.2	4
43	Long Island College Hospital	101	97	4	4.0	4	98	95	3	3.1	3	3	2	1	33.3	2	91	89	2	2.2	2
44	New York Homeo. Med. Coll. and Flower Hosp.	45	41	4	8.9	3	43	41	2	4.7	2	2	0	2	100.0	2	42	40	2	4.8	1
45	University and Bellevue Hospital Medical College	96	96	0	0.0	6	95	95	0	0.0	5	1	1	0	0.0	1	89	89	0	0.0	3
46	Syracuse University College of Medicine	41	40	1	2.4	4	41	40	1	2.4	4	0	0	0	0.0	0	36	35	1	2.8	1
	OHIO																				
47	Eclectic Medical College	67	58	9	13.4	12	66	57	9	13.6	10	1	1	0	0.0	1	51	44	7	13.7	6
48	University of Cincinnati College of Medicine	62	62	0	0.0	11	61	61	0	0.0	11	1	1	0	0.0	1	50	50	0	0.0	4
49	Western Reserve University School of Medicine	46	46	0	0.0	1	46	46	0	0.0	1	0	0	0	0.0	0	45	45	0	0.0	1
50	Ohio State University College of Medicine	82	82	0	0.0	7	81	81	0	0.0	6	1	1	0	0.0	1	76	76	0	0.0	1
	OKLAHOMA																				
51	University of Oklahoma School of Medicine	47	46	1	2.1	8	45	44	1	2.2	6	2	2	0	0.0	2	39	39	0	0.0	2
	OREGON																				
52	University of Oregon Medical School	48	47	1	2.1	5	48	47	1	2.1	4	0	0	0	0.0	0	33	33	0	0.0	2
	PENNSYLVANIA																				
53	Hahnemann Medical College and Hosp. of Phila.	55	55	0	0.0	10	55	55	0	0.0	10	0	0	0	0.0	0	7	7	0	0.0	5
54	Jefferson Medical College of Philadelphia	165	162	3	1.8	24	157	156	1	0.6	24	8	6	2	25.0	4	39	38	1	2.6	16
55	Temple University School of Medicine	48	44	4	8.3	6	45	42	3	6.7	5	3	2	1	33.3	2	2	1	1	50.0	2
56	University of Pennsylvania School of Medicine	139	138	1	0.7	21	120	120	0	0.0	19	20	19	1	5.0	8	24	24	0	0.0	2
57	University of Pittsburgh School of Medicine	55	53	2	3.6	6	52	50	2	3.8	6	3	3	0	0.0	2	5	5	0	0.0	2
58	Woman's Medical College of Pennsylvania	31	28	3	9.7	9	29	26	3	10.3	7	1	1	0	0.0	1	4	4	0	0.0	2
	SOUTH CAROLINA																				
59	Medical College of the State of South Carolina	50	46	4	8.0	7	49	45	4	8.2	7	1	1	0	0.0	1	43	40	3	7.0	4
	TENNESSEE																				
60	University of Tennessee College of Medicine	71	69	2	2.8	13	68	66	2	2.9	13	3	3	0	0.0	3	52	52	0	0.0	5
61	Meharry Medical College	83	66	17	20.5	20	75	63	12	16.0	20	8	3	5	62.5	5	56	50	6	10.7	13
62	Vanderbilt University School of Medicine	73	70	3	4.1	10	65	64	1	1.5	9	8	6	2	25.0	4	53	53	0	0.0	4
	TEXAS																				
63	Baylor University College of Medicine	44	42	2	4.5	5	41	41	0	0.0	4	3	1	2	66.7	2	38	38	0	0.0	4
64	University of Texas School of Medicine	76	75	1	1.3	5	76	75	1	1.3	5	0	0	0	0.0	0	67	66	1	1.5	3

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1922–1926					Graduates of 1921 and Previous					Graduates of 1926					Marginal Number
		Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	
	VERMONT																					
65	University of Vermont College of Medicine	43	40	3	7.0	6	40	39	1	2.5	4	3	1	2	66.7	2	24	23	1	4.2	3	65
	VIRGINIA																					
66	Medical College of Virginia	104	103	1	1.0	13	100	99	1	1.0	11	4	4	0	0.0	3	81	80	1	1.2	8	66
67	University of Virginia Department of Medicine	52	52	0	0.0	9	45	45	0	0.0	9	7	7	0	0.0	3	35	35	0	0.0	4	67
	WISCONSIN																					
68	Marquette University School of Medicine	60	58	2	3.3	5	59	57	2	3.4	5	1	1	0	0.0	1	56	54	2	3.6	4	68
	PHILIPPINE ISLANDS																					
69	University of the Philippines, Manila	25	25	0	0.0	1	25	25	0	0.0	1	0	0	0	0.0	0	25	25	0	0.0	1	69
70	University of St. Thomas, Manila	50	50	0	0.0	1	48	48	0	0.0	1	2	2	0	0.0	1	25	25	0	0.0	1	70
	CANADA																					
71	University of Alberta Faculty of Medicine	5	5	0	0.0	4	5	5	0	0.0	4	0	0	0	0.0	0	1	1	0	0.0	1	71
72	Dalhousie University Faculty of Medicine	12	10	2	16.7	7	9	8	1	11.1	6	3	2	1	33.3	2	4	4	0	0.0	2	72
73	Queen's University Faculty of Medicine	30	29	1	3.3	10	22	21	1	4.5	8	8	8	0	0.0	5	7	6	1	14.3	4	73
74	University of Toronto Faculty of Medicine	96	94	2	2.1	12	80	78	2	2.5	10	16	16	0	0.0	7	7	7	0	0.0	3	74
75	University of Western Ontario Medical School	27	25	2	7.5	8	16	16	0	0.0	5	11	9	2	18.2	6	3	3	0	0.0	2	75
76	McGill University Faculty of Medicine	95	93	2	2.1	18	80	78	2	2.5	17	15	15	0	0.0	8	15	14	1	6.3	6	76
77	University of Montreal Faculty of Medicine	10	5	5	50.0	3	10	5	5	50.0	3	0	0	0	0.0	0	0	0	0	0.0	0	77
78	Laval University Faculty of Medicine	10	6	4	40.0	6	4	0	4	100.0	3	6	6	0	0.0	4	2	0	2	100.0	1	78
79	University of Manitoba Faculty of Medicine	20	20	0	0.0	9	10	10	0	0.0	5	10	10	0	0.0	6	5	5	0	0.0	3	79
80	Foreign Colleges	330	196	134	40.6	29	138	83	55	39.9	23	192	113	79	41.1	28	5	3	2	40.0	3	80
81	Miscellaneous Medical Colleges	131	90	41	30.8	30	4	3	1	25.0	3	127	87	40	30.7	30	0	0	0	0.0	0	81
82	Undergraduates and Osteopaths	158	97	61	38.6	9	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	82
83	Totals by States	5809	.....	.....	.....	.....	4992	.....	.....	.....	.....	659	.....	.....	.....	.....	3186	.....	.....	.....	.....	83
84	Totals—Examined—Passed	.....	5342	.....	.....	.....	.....	4755	.....	.....	.....	.....	490	.....	.....	.....	.....	3104	.....	.....	.....	84
85	Totals—Examined—Failed	.....	.....	467	.....	.....	.....	.....	237	.....	.....	.....	.....	169	.....	.....	.....	.....	82	.....	.....	85
86	Percentage of Failures	.....	.....	.....	8.0	.....	.....	.....	.....	4.7	.....	.....	.....	.....	25.5	.....	.....	.....	.....	2.6	.....	86

(CONTINUED FROM PAGE 1399)

pathic schools, thus removing from the medical board jurisdiction over the osteopaths and adding California to the states having multiple boards responsible for the licensing of physicians and surgeons.

Recent Graduates Examined During 1926

Table B gives the results for graduates of 1922 to 1926, inclusive, who were examined during 1926. This table deals with recent graduates and is the fairest basis for comparison between colleges. Of all candidates examined in 1926, 4,992, or 87.8 per cent, were recent graduates, and of this number 4.7 failed, as compared with 8.0 per cent for all candidates.

Old Practitioners Examined During 1926

Table C is arranged so as to show in comparison the results for graduates of all years (first column), for recent graduates (second column), for graduates of 1921 and previous years (third column), and for graduates of 1926 (fourth column). Of the graduates of 1921 and previous years—"old practitioners"—659 were examined, and of this number 169, or 25.5 per cent, failed, as compared with 4.7 per cent of failures for recent graduates. The numbers of these candidates will be diminished (see table 4) if state licensing boards extend their provisions for reciprocity, or more generally endorse, without further examination, licenses granted

(CONTINUED ON PAGE 1409)

TABLE 2.—*Graduates of Nondescript Colleges and Undergraduates Licensed in Ten Years*

	1917		1918		1919		1920		1921		1922		1923		1924		1925		1926		Total Examined	Total Registered	Total Failed	Percentage Failed
	Examined	Registered	Examined	Registered	Examined	Registered	Examined	Registered	Examined	Registered	Examined	Registered	Examined	Registered	Examined	Registered	Examined	Registered	Examined	Registered				
Alabama	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	1	0	0.0
Arizona	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	1	...	...	2	2	0	0.0
Arkansas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	4	4	6	6	0	0.0
California	151	73	133	77	28	13	27	12	32	25	66	32	...	...	1	0	...	...	57	47	495	279	216	43.6
Colorado	63	52	26	21	27	16	34	17	17	13	15	8	18	10	8	8	11	4	24	14	243	163	80	32.9
Connecticut	...	...	...	...	...	...	...	...	...	...	35	25	...	...	...	...	...	...	...	...	35	25	10	28.6
District of Columbia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	0	0.0
Idaho	...	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	0	0.0
Illinois	...	...	...	...	...	...	...	...	...	...	...	...	1	0	2	0	1	0	...	...	4	0	4	100.0
Kentucky	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	1	1	0	3	2	1	33.3
Massachusetts	63	29	51	32	19	4	23	7	24	8	19	13	36	26	17	15	35	13	61	26	348	173	175	50.3
Michigan	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	0	0.0
Minnesota	...	...	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3	0	0.0
Mississippi	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	2	2	3	1	6	4	2	33.3
Missouri	...	...	...	...	...	...	...	...	...	...	4	1	...	...	...	...	...	...	...	...	4	1	3	75.0
New Hampshire	...	...	2	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	1	33.3
North Carolina	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	1	0	0.0
Oklahoma	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	2	2	0	0.0
Oregon	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	1	0	0.0
Tennessee	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	2	2	0	0.0
Texas	...	...	...	...	1	1	...	...	3	3	2	2	1	1	3	2	8	5	6	3	24	17	7	29.2
Utah	...	...	...	...	...	...	2	2	1	1	...	...	...	...	...	...	...	...	...	...	3	3	0	0.0
Washington	...	...	7	6	2	2	...	...	...	...	...	...	...	...	1	1	...	...	...	...	10	9	1	10.0
West Virginia	...	...	...	...	5	0	...	...	1	0	1	0	1	0	...	...	...	...	...	...	8	0	8	100.0
Wisconsin	...	...	...	...	...	...	...	...	6	5	1	1	...	...	...	...	2	2	...	...	9	8	1	11.1
Wyoming	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	1	0	0.0
Totals	277	154	224	142	85	39	88	40	88	59	144	83	58	38	34	28	62	29	158	97	1218	709		
Rejected	123		84		46		48		29		61		20		6		33		61		....	...	509	41.8

TABLE D—RECOGNITION OF MEDICAL COLLEGES

This table, based on official reports, shows in what states diplomas granted by certain medical colleges are not recognized as an acceptable qualification for the license to practice medicine

Colleges marked (x) have been reported as not recognized by the states in the columns of which the letter appears

	COLLEGE	Classification by Council on Medical Education †	1 Alabama	2 Alaska	3 Arizona	4 Arkansas	5 California	6 Colorado	7 Connecticut	8 Delaware	9 District of Columbia	10 Florida	11 Georgia	12 Idaho	13 Illinois	14 Indiana	15 Iowa	16 Kansas	17 Kentucky	18 Louisiana	19 Maine	20 Maryland	21 Massachusetts	22 Michigan	23 Minnesota	24 Mississippi	25 Missouri	26 Montana	27 Nebraska	28 Nevada	29 New Hampshire	30 New Jersey	31 New Mexico	32 New York	33 North Carolina	34 North Dakota	35 Ohio	36 Oklahoma	37 Oregon	38 Pennsylvania	39 Rhode Island	40 South Carolina	41 South Dakota	42 Tennessee	43 Texas	44 Utah	45 Vermont	46 Virginia	47 Washington	48 West Virginia	49 Wisconsin	50 Wyoming	Reported Non-Recognition by State Licensing Boards: No. of State Boards reporting full recognition	No. of State Boards reporting college not recognized	Percentage of State Boards reporting full recognition	Marginal Number
1	Albany Medical College	A																																																							50		100	1
2	Baylor University School of Medicine	A																																																									50		100	2
3	Boston University School of Medicine	A																																																								50		100	3
4	Chicago Medical School [1]	C	x	x	x	x	x	x	x	x		x	x	x		x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	3	47	6	4
5	College of Medical Evangelists	A																																																							50		100	5
6	College of Physicians and Surgeons, Boston	C	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	48	4	6
7	Columbia University College of Physicians and Surg.	A																																																							50		100	7
8	Cornell University Medical College	A																																																							50		100	8
9	Creighton University College of Medicine	A																																																							50		100	9
10	Dartmouth Medical School *	A																																																							50		100	10
11	Detroit College of Medicine and Surgery	A																																																							50		100	11
12	Eclectic Medical College	B	x							x				x			x												x			x															x									36	14	72	12
13	Emory University School of Medicine	A																																																							50		100	13
14	Georgetown University School of Medicine	A																																																							50		100	14
15	George Washington University Medical School	A																																																							50		100	15
16	Hahnemann Med. College and Hospital, Philadelphia	A																																																							50		100	16
17	Harvard University Medical School	A																																																							50		100	17
18	Howard University School of Medicine	A																																																							50		100	18
19	Indiana University School of Medicine	A																																																							50		100	19
20	Jefferson Medical College	A																																																							50		100	20
21	Johns Hopkins University School of Medicine	A																																																							50		100	21
22	Kansas City College of Medicine and Surgery [2] [4]	C	x			x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	3	47	6	22
23	Kansas City University of Physicians and Surgeons [3]	C	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	48	4	23
24	Long Island College Hospital	A																																																						50		100	24
25	Loyola University Medical Department	A																																																							50		100	25
26	Marquette University School of Medicine	A																																																							50		100	26
27	Medical College of the State of South Carolina	A																																																							50		100	27
28	Medical College of Virginia	A																																																							50		100	28
29	Meharry Medical College	A																					x												x																						48	2	96	29
30	Middlesex College of Medicine and Surgery	C	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	48	4	30
31	New York Homeo. Med. College and Flower Hospital	B	x			x								x			x	x											x																														33	17	66	31
32	Northwestern University Medical School	A																																																								50		100	32
33	Ohio State University College of Medicine	A																																																							50		100	33
34	Rush Medical College (University of Chicago)	A																																																							50		100	34
35	St. Louis College of Physicians and Surgeons [4]	C	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1	49	2	35
36	St. Louis University School of Medicine	A																																																							50		100	36
37	Stanford University School of Medicine	A																																																							50		100	37
38	State University of Iowa College of Medicine	A																																																							50		100	38
39	Syracuse University College of Medicine	A																																																							50		100	39
40	Temple University School of Medicine	B	x			x						x		x	x		x	x					x				x	x			x																										27	23	54	40
41	Tufts College Medical School	A																																																							50		100	41
42	Tulane University School of Medicine	A																																																							50		100	42
43	University and Bellevue Hospital Medical College	A																																																							50		100	43
44	University of Alabama School of Medicine *	A																																																							50		100	44
45	University of Arkansas School of Medicine	A																																																							50		100	45
46	University of Buffalo School of Medicine	A																																																							50		100	46
47	University of California Medical School	A																																																							50		100	47
48	University of Cincinnati Medical College	A																																																							50		100	48
49	University of Colorado School of Medicine	A																																																							50		100	49
50	University of Georgia Medical Department	A																																																							50		100	50
51	University of Illinois College of Medicine	A																																																							50		100	51
52	University of Kansas School of Medicine	A																																																							50		100	52
53	University of Louisville School of Medicine	A																																																							50		100	53
54	Univ. of Md. School of Med. and Coll. of P. and S.	A																																																						50		100	54
55	University of Michigan Medical School	A																																																						50		100	55

| | | |

sure of the Missouri diploma-mill ring in October, 1923, gave additional impetus to the housecleaning in Connecticut until altogether 176 licenses were revoked on the ground that they were obtained illegally. A new practice law was enacted creating a board governing the healing arts and it is believed that in Connecticut a permanent safeguard has been established against the licensing of unfit physicians. The effect of this housecleaning is shown by the statistics published this week in the fact that (table 1) only one graduate of a low grade college has been licensed in Connecticut in three years, whereas in the three previous years at least 167 were so licensed.

Florida formerly had three separate boards, which in 1921 were replaced by a single, composite board. But the secretary of the Eclectic board refused to turn his records over to the composite board, which gave him the opportunity of continuing to issue licenses which, by being dated in or prior to 1921, had the appearance of legality. Indeed, this practice, coupled with his conviction in March, 1927, of using the mails in the sale of fraudulent diplomas, resulted in the sentence of Dr. George A. Munch to a fine of $1,000 and to five years in the penitentiary. It is hoped that this will permanently close the door against "easy" licenses in Florida.

The closing of the doors in Connecticut and Florida to graduates of seriously low grade medical schools leaves Arkansas as the only remaining wide open door for graduates of seriously low grade, nominally eclectic medical colleges. In Connecticut and Florida, the issuing of licenses was supposedly limited to graduates of eclectic medical colleges, and this is the case also in Arkansas. Nevertheless, in 1926 a

TABLE E.—*Physicians Examined by State Boards, 1922 to 1926, Inclusive*

STATES	1922		1923		1924		1925		1926		Totals			
	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Examined	Registered	Rejected	Percentage Rejected
Alabama	31	1	36	2	25	1	26	1	30	0	153	148	5	3.3
Arizona	7	2	6	2	6	0	5	0	12	1	41	36	5	12.2
Arkansas	30	1	50	4	32	1	48	0	29	0	195	189	6	3.1
California	208	67	185	68	250	80	293	38	275	29	1493	1211	282	18.9
Colorado	32	34	51	19	40	15	52	17	80	27	376	264	112	29.8
Connecticut	114	26	77	19	83	22	49	14	45	6	455	368	87	19.1
Delaware	17	0	5	0	8	1	4	1	7	1	44	41	3	6.8
Dist. of Columbia	54	7	57	6	68	13	105	2	95	8	415	379	36	8.7
Florida	56	21	72	28	147	39	437	100	196	45	1141	908	233	20.4
Georgia	68	1	80	1	80	0	86	0	78	0	394	392	2	0.5
Idaho	11	0	9	0	5	0	9	0	14	1	49	48	1	2.0
Illinois	286	68	350	105	364	81	286	39	408	39	2036	1704	332	16.3
Indiana	35	1	67	0	78	0	96	0	84	0	361	360	1	0.3
Iowa	49	0	53	0	59	0	89	1	92	0	343	342	1	0.3
Kansas	28	5	31	0	47	0	65	0	81	0	257	252	5	2.0
Kentucky	37	4	38	3	54	0	58	2	74	6	276	261	15	5.4
Louisiana	55	4	66	0	73	1	72	2	77	2	352	343	9	2.6
Maine	28	0	28	0	59	0	40	3	39	3	200	194	6	3.0
Maryland	74	3	91	5	96	4	115	6	106	2	502	482	20	4.0
Massachusetts	244	56	219	62	260	68	146	68	256	105	1484	1125	359	24.2
Michigan	119	4	202	2	224	2	208	2	227	2	1052	1040	12	1.1
Minnesota	107	3	83	0	115	0	135	0	152	0	595	592	3	0.5
Mississippi	27	2	22	4	20	1	28	0	18	2	124	115	9	7.3
Missouri	107	16	145	29	182	16	165	11	158	3	832	757	75	9.0
Montana	11	2	17	1	18	1	13	1	12	0	76	71	5	6.6
Nebraska	42	0	94	0	85	3	124	5	101	0	454	446	8	1.8
Nevada	13	1	7	2	7	0	2	0	2	0	34	31	3	8.8
New Hampshire	12	0	4	0	3	0	3	0	2	0	24	24	0	0.0
New Jersey	25	10	52	14	66	10	74	6	55	8	320	272	48	15.0
New Mexico	0	0	0	0	0	0	1	0	2	1	4	3	1	25.0
New York	599	80	675	153	788	177	933	136	883	124	4548	3878	670	14.2
North Carolina	37	8	65	5	89	1	80	1	93	0	379	364	15	4.0
North Dakota	6	2	11	1	3	0	18	3	16	2	62	54	8	12.9
Ohio	183	6	222	4	255	22	306	13	279	4	1294	1245	49	3.8
Oklahoma	20	2	27	3	15	0	38	0	49	0	154	149	5	3.2
Oregon	23	7	19	4	41	7	51	9	51	2	214	185	29	13.6
Pennsylvania	265	18	215	20	302	11	335	24	371	8	1509	1488	81	5.2
Rhode Island	27	0	26	1	20	3	25	2	26	4	134	124	10	7.5
South Carolina	24	1	40	0	34	2	38	1	44	4	188	180	8	4.3
South Dakota	19	0	21	0	21	1	14	0	17	0	93	92	1	1.1
Tennessee	65	1	100	0	116	0	119	0	136	0	537	536	1	0.2
Texas	77	0	75	0	98	1	110	5	124	5	495	484	11	2.2
Utah	11	3	10	1	8	0	13	0	14	1	61	56	5	8.2
Vermont	19	0	24	0	34	0	52	0	38	1	168	167	1	0.6
Virginia	55	0	71	2	76	1	87	0	96	0	388	385	3	0.8
Washington	6	6	11	0	30	1	27	2	23	2	108	97	11	10.2
West Virginia	42	9	47	4	61	4	57	9	52	11	296	259	37	12.5
Wisconsin	60	3	59	0	102	9	115	12	104	3	467	440	27	5.8
Wyoming	8	3	3	1	3	1	4	0	3	1	27	21	6	22.2
U. S. Territories and Possessions	28	4	80	125	63	37	78	16	107	4	542	356	186	34.3
Totals	3,993		4,698		5,350		5,956		5,809		25,806			
Registered	3,501		3,998		4,713		5,404		5,342		22,958			
Rejected	492		700		637		552		467		2,848			
Per cent rejected	12.3		14.9		11.9		9.3		8.0		11.0			

This table gives the number of physicians who passed and failed in the examinations in each state during the last five years. The last four columns give the totals and the percentage rejected by each state during the five year period. Seven states registered over 1,000 candidates by examination in the five years—New York, Illinois, Pennsylvania, Massachusetts, California, Ohio and Michigan. Altogether 22,958 physicians were registered by examination in the five years, an average of 4,592 each year.

The states having the highest percentages of failures in the five years were Colorado 29.8; Massachusetts 24.2; Wyoming 22.2, and Florida 20.4. The licensing boards of Colorado, Massachusetts and Texas admitted osteopaths to their examinations as physicians and surgeons and would be expected to have high percentages of failures. On the other hand, in most states the boards refuse to recognize low grade colleges (see table D) thereby eliminating inferior candidates prior to the examination and correspondingly the percentages of failures at examinations should be lowered. There were no failures in New Hampshire during the five years. The next lowest failure percentages were in Tennessee 0.2; Indiana and Iowa each 0.3; Georgia and Minnesota each 0.5.

TABLE F.—*Registration by State Boards During the Year 1926*

STATES	By Examination			By Reciprocity or Credentials	Without Written Examination or Under Exemption	Total Registered
	Graduates, 1922-1926	Graduates, 1921 and Previous	Nongraduates and Graduates of Nondescript Colleges			
Alabama	30	..	..	54	..	84
Arizona	11	1	..	20	..	32
Arkansas	23	2	4	25	..	54
California	206	22	47	255	..	530
Colorado	66	9	14	63	..	152
Connecticut	43	2	..	47	..	92
Delaware	7	..	..	5	..	12
Dist. of Columbia	81	13	1	18	..	113
Florida	99	97	..	..	..	196
Georgia	76	2	..	24	..	102
Idaho	9	5	..	10	..	24
Illinois	387	21	..	58	3	469
Indiana	84	..	..	52	..	136
Iowa	89	3	..	35	..	127
Kansas	78	3	..	36	..	117
Kentucky	67	7	..	30	..	104
Louisiana	73	4	..	11	..	88
Maine	31	8	..	7	..	46
Maryland	101	5	..	28	..	134
Massachusetts	196	34	26	..	..	256
Michigan	205	21	1	92	..	319
Minnesota	141	11	..	62	..	214
Mississippi	13	4	1	27	..	45
Missouri	143	15	..	..	..	158
Montana	11	1	..	6	..	18
Nebraska	99	2	..	12	..	113
Nevada	..	2	..	17	..	19
New Hampshire	1	1	..	18	..	20
New Jersey	48	7	..	..	..	55
New Mexico	1	1	..	15	..	17
New York	812	71	..	152	4	1,039
North Carolina	92	1	..	33	..	126
North Dakota	14	2	..	11	1	28
Ohio	268	11	..	92	..	371
Oklahoma	47	2	..	29	..	78
Oregon	47	4	..	17	..	68
Pennsylvania	341	30	..	50	..	421
Rhode Island	18	8	..	..	..	26
South Carolina	42	2	..	..	..	44
South Dakota	11	6	..	9	..	23
Tennessee	131	5	..	10	..	146
Texas	115	6	3	..	..	124
Utah	14	..	..	29	..	43
Vermont	36	2	..	5	..	43
Virginia	95	1	..	32	..	128
Washington	16	7	..	92	..	115
West Virginia	45	7	..	31	..	83
Wisconsin	95	9	..	35	..	139
Wyoming	2	1	..	11	..	14
U. S. Territories and Possessions	95	12	..	2	..	109
Totals	4,755	490	97	1,667	8	7,017

This table shows the numbers registered in each state during 1926 by examination, by reciprocity, and by endorsement of credentials. The first three columns show those registered by examination, including recent graduates, older practitioners and nongraduates or graduates of nondescript colleges, including such osteopaths as were licensed as physicians and surgeons. The fourth column shows the number registered by the endorsement of licenses issued by other states (reciprocity) and of certificates of the Army, Navy, Public Health Service and of the National Board of Medical Examiners. The fifth column shows the few who were licensed under various exemption clauses in the practice acts—because of high professional standing. Osteopaths were licensed as physicians and surgeons in California, 47; Massachusetts, 26; Colorado, 12 and Texas 3. The last column shows for each state the number of physicians registered by all methods during 1926. Seven states registered over 300 each, these being New York, 1,039; California, 530; Illinois, 469; Pennsylvania, 421; Ohio, 371, and Michigan, 319. The total registration by all methods was 7,017, a decrease of 177 since 1925.

TABLE G.—*Registration by State Boards for Five Years*

State	1922	1923	1924	1925	1926	Totals
Alabama	43	53	50	47	84	277
Arizona	37	27	26	30	32	152
Arkansas	66	79	51	80	54	330
California	630	692	638	584	530	3,074
Colorado	119	102	86	108	152	567
Connecticut	150	101	107	116	92	566
Delaware	22	12	11	12	12	69
District of Columbia	69	79	90	119	113	470
Florida	56	72	157	438	196	919
Georgia	84	95	100	98	102	479
Idaho	22	12	16	15	24	89
Illinois	335	427	432	358	469	2,021
Indiana	69	142	157	161	136	665
Iowa	70	70	101	139	127	507
Kansas	86	102	90	93	117	488
Kentucky	69	67	88	94	104	422
Louisiana	64	76	81	81	88	390
Maine	34	32	68	51	46	231
Maryland	93	122	111	139	134	599
Massachusetts	244	221	266	153	256	1,140
Michigan	292	282	319	335	319	1,457
Minnesota	200	147	180	205	214	946
Mississippi	43	45	33	41	45	207
Missouri	130	216	191	165	158	860
Montana	11	20	26	24	18	99
Nebraska	62	118	99	134	113	526
Nevada	24	20	23	11	19	97
New Hampshire	12	10	22	20	20	84
New Jersey	137	208	124	74	55	598
New Mexico	41	31	16	21	17	126
New York	748	754	881	1,078	1,039	4,500
North Carolina	66	111	128	118	126	549
North Dakota	14	16	14	30	28	102
Ohio	261	307	388	383	371	1,710
Oklahoma	78	76	48	67	78	347
Oregon	47	44	57	93	68	309
Pennsylvania	313	256	343	367	421	1,700
Rhode Island	27	26	20	25	26	124
South Carolina	30	45	41	51	44	211
South Dakota	22	28	31	24	26	131
Tennessee	65	114	116	119	146	560
Texas	178	201	98	242	124	843
Utah	27	24	18	26	43	138
Vermont	21	30	36	59	43	189
Virginia	80	98	104	117	128	527
Washington	59	74	116	113	115	477
West Virginia	82	106	84	80	83	435
Wisconsin	110	104	189	165	139	707
Wyoming	17	13	19	12	14	75
U. S. Possessions	28	214	63	79	109	493
Totals	5,497	6,321	6,553	7,194	7,017	32,582

This table shows the totals registered by all methods in each state during the last five years. Marked decreases are noteworthy in Florida, 245; Texas, 118; California, 54 and Connecticut, 24. Marked increases over 1925, however, are noted in Massachusetts, 103; Pennsylvania, 54, and Colorado, 44. During the four years following 1921 the totals registered increased from 5,497 in 1922 to 7,194 in 1925—the largest number registered since 1910. In 1926 there was a decrease of 177.

TABLE H.—*Qualifications of Physicians Licensed in 1926*

Marginal Number	STATE	By Examination					By Reciprocity or Credentials					Totals Registered from Medical Colleges in Class				Grand Totals	Marginal Number
		Medical Colleges in Class				Totals	Medical Colleges in Class				Totals						
		A	B	C	Misc.		A	B	C	Misc.		A	B	C	Misc.		
1	Alabama	29	1	..	..	30	48	5	..	1	54	77	6	..	1	84	1
2	Arizona	11	1	..	..	12	11	3	..	6	20	22	4	..	6	32	2
3	Arkansas	20	1	7	1	29	15	5	1	4	25	35	6	8	5	54	3
4	California	206	2	47	20	275	186	24	2	43	255	392	26	49	63	530	4
5	Colorado	41	1	43	4	89	44	7	1	11	63	85	8	44	15	152	5
6	Connecticut	42	3	..	..	45	44	1	..	2	47	86	4	..	2	92	6
7	Delaware	6	1	..	..	7	2	1	..	2	5	8	2	..	2	12	7
8	District of Columbia	88	3	1	3	95	14	..	2	2	18	102	3	3	5	113	8
9	Florida	165	6	3	22	196	..	..	..	..	0	165	6	3	22	196	9
10	Georgia	78	..	..	..	78	19	1	1	3	24	97	1	1	3	102	10
11	Idaho	13	..	..	1	14	8	..	..	2	10	21	..	..	3	24	11
12	Illinois	346	8	40	14	408	47	8	..	6	61	393	16	40	20	469	12
13	Indiana	79	5	..	..	84	43	3	..	6	52	122	8	..	6	136	13
14	Iowa	90	2	..	..	92	30	4	..	1	35	120	6	..	1	127	14
15	Kansas	77	2	..	2	81	29	2	..	5	36	106	4	..	7	117	15
16	Kentucky	61	9	1	3	74	24	4	..	2	30	85	13	1	5	104	16
17	Louisiana	74	..	3	..	77	11	..	..	..	11	85	..	3	..	88	17
18	Maine	36	1	..	2	39	5	..	..	2	7	41	1	..	4	46	18
19	Maryland	102	2	..	2	106	20	2	2	4	28	122	4	2	6	134	19
20	Massachusetts	183	1	55	17	256	..	..	..	..	0	183	1	55	17	256	20
21	Michigan	217	1	1	8	227	63	10	2	17	92	280	11	3	25	319	21
22	Minnesota	147	1	..	4	152	60	1	..	1	62	207	2	..	5	214	22
23	Mississippi	13	..	2	3	18	20	4	..	3	27	33	4	2	6	45	23
24	Missouri	147	5	..	6	158	..	..	..	..	0	147	5	..	6	158	24
25	Montana	12	..	..	..	12	5	1	..	..	6	17	1	..	..	18	25
26	Nebraska	99	..	1	1	101	9	..	1	2	12	108	..	2	3	113	26
27	Nevada	2	..	..	..	2	12	1	1	2	17	14	1	1	3	19	27
28	New Hampshire	1	1	..	..	2	18	..	..	..	18	19	1	..	..	20	28
29	New Jersey	46	2	..	7	55	..	..	..	..	0	46	2	..	7	55	29
30	New Mexico	2	..	..	..	2	9	2	1	3	15	11	2	1	3	17	30
31	New York	751	64	..	68	883	123	3	..	30	156	874	67	..	98	1,039	31
32	North Carolina	93	..	..	..	93	25	..	1	7	33	118	..	1	7	126	32
33	North Dakota	16	..	..	..	16	12	..	..	..	12	28	..	..	..	28	33
34	Ohio	267	5	..	7	279	80	6	..	6	92	347	11	..	13	371	34
35	Oklahoma	47	..	..	2	49	20	4	..	5	29	67	4	..	7	78	35
36	Oregon	48	1	1	1	51	15	..	..	2	17	63	1	1	3	68	36
37	Pennsylvania	304	44	3	20	371	48	1	1	..	50	352	45	4	20	421	37
38	Rhode Island	20	..	..	6	26	..	..	..	..	0	20	..	..	6	26	38
39	South Carolina	42	..	..	2	44	..	..	..	..	0	42	..	..	2	44	39
40	South Dakota	15	1	..	1	17	6	1	2	..	9	21	2	2	1	26	40
41	Tennessee	134	1	..	1	136	8	1	..	1	10	142	2	..	2	146	41
42	Texas	110	..	4	10	124	..	..	..	..	0	110	..	4	10	124	42
43	Utah	14	..	..	..	14	26	..	..	3	29	40	..	..	3	43	43
44	Vermont	36	1	..	1	38	4	..	..	1	5	40	1	..	2	43	44
45	Virginia	96	..	..	..	96	27	2	1	2	32	123	2	1	2	128	45
46	Washington	22	..	..	1	23	75	4	1	12	92	97	4	1	13	115	46
47	West Virginia	46	1	..	5	52	28	1	..	2	31	74	2	..	7	83	47
48	Wisconsin	93	2	..	9	104	22	7	1	5	35	115	9	1	14	139	48
49	Wyoming	3	..	..	..	3	9	1	..	1	11	12	1	..	1	14	49
50	U. S. Territories and Poss.	27	2	..	78	107	1	..	..	1	2	28	2	..	79	109	50
	Totals	4,617	181	212	332	5,342	1,325	120	21	209	1,675	5,942	301	233	541	7,017	

In 1926, 7 class C candidates were licensed by the Arkansas Eclectic Board, including one graduate of a regular medical school and four who do not appear to have graduated from any bona fide medical school.

Of the 49 class C graduates in California, 47 were osteopaths licensed as physicians and surgeons by the Osteopathic Board, created in 1923 by an amendment of the medical practice act.

Of the 44 licensed in Colorado, 12 were osteopaths and 2 were non-graduates.

Of the 55 licensed in Massachusetts, 26 were graduates of osteopathic colleges which are rated as of class C.

In Connecticut in 1926, no candidates were reported as licensed by the Eclectic Board and no class C candidate was licensed.

Illinois harbors the Chicago Medical School, a class C medical college, which is not recognized in 47 other states. Massachusetts has two class C colleges, the College of Physicians and Surgeons and the Middlesex College of Medicine and Surgery, but does not have the authority to refuse recognition to low grade institutions. This accounts for the large number of class C graduates licensed in that state. Missouri has three class C colleges, the Kansas City University of Physicians and Surgeons, the American Medical University and the St. Louis College of Physicians and Surgeons, but the Missouri board has consistently refused recognition to these colleges and, therefore, did not register any class C graduates in 1926.

Texas reports that class C medical schools are not recognized but accepted three osteopaths as physicians who came from schools of a still lower type.

Nine states accepted class C graduates through reciprocity, while they refused to license them by examination. Maryland, Michigan and South Dakota so registered 2 each. One each was licensed by reciprocity in six other states. Altogether 12 class C graduates were licensed by reciprocity in states which registered none by examination. On the whole, in 1926, 212 class C graduates were licensed by examination and 21 through reciprocity, a total of 233, 62 more than in 1925.

license was issued by this board to a graduate of the St. Louis College of Physicians and Surgeons, which is a regular medical school and was one of the two medical schools in Missouri exposed as engaged in the sale of diplomas.

It is evident that if the graduates of inferior medical colleges are not eligible for license in the majority of states, they will flock to the few that still grant such recognition. The following states, therefore—Arkansas (eclectic board), Illinois, Massachusetts and the District of Columbia—will remain the dumping ground for the output of low grade medical colleges until the licensing boards obtain and exercise the needed authority to bar them. Illinois will be the chief recipient of the graduates of the Chicago Medical School, which is still tolerated in that state.

STUDY OF TOTALS AND PERCENTAGES

A study of totals and percentages (table 4) as compared with previous years is of interest. The number, 5,809, examined in 1926, was 147 less than that examined in 1925, but 459 more than in 1924 and 1,111 more than in 1923. Indications are that the totals will be increased during the next five years. By all methods—examination, reciprocity, under exemption, etc.—7,017 physicians were *licensed* during 1926, 177 less than in 1925 and 464 more than in 1924, but 848 less than in 1906, when 7,865 physicians were licensed. The physi-

TABLE 4.—*Results for This and Previous Years*

Year	All Candidates Examined				Recent Graduates		Older Graduates		Nondescript		Registered without Written Examination	Total Registered
	Examined	Passed	Failed	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed		
1904	7035	5672	1363	19.3	4773	14.1	579	29.7	515	52.6	999	6671
1905	7170	5680	1490	20.8	6054	16.2	690	37.7	472	61.9	394	6074
1906	8035	6368	1667	20.7	6250	16.4	793	27.1	703	51.3	1497	7865
1907	7271	5723	1548	21.3	5922	15.1	675	27.7	674	60.6	1426	7149
1908	7770	6084	1686	21.7	6477	17.8	796	31.5	494	56.8	1276	7360
1909	7287	5857	1430	19.6	5891	15.4	958	30.0	438	54.1	1373	7230
1910	7004	5712	1292	18.4	5678	14.9	973	29.1	353	45.6	1640	7352
1911	6960	5578	1382	19.9	5685	17.2	945	29.4	330	38.5	1246	6824
1912	6879	5466	1413	20.5	5770	18.6	856	29.2	253	34.8	1257	6723
1913	6435	5236	1199	18.6	5390	16.5	225	32.1	251	37.8	1265	6501
1914	5570	4370	1200	21.6	4549	17.6	728	30.0	293	61.4	1427	5797
1915	5313	4486	827	15.6	4627	13.2	621	29.3	65	49.2	1386	5872
1916	4850	4123	727	15.0	4283	12.7	567	32.1	...	....	1338	5461
1917	4730	4061	669	14.1	4015	10.1	564	32.6	...	....	1362	5423
1918	3637	3154	483	13.3	2984	9.3	479	30.5	...	....	1031	4185
1919	4736	4060	676	14.3	3904	10.5	766	30.8	66	47.0	2521	6584
1920	4787	4053	734	15.3	3984	11.5	738	33.2	65	50.8	2504	6557
1921	4807	4211	596	12.4	4046	7.8	673	37.3	88	33.0	2137	6348
1922	3993	3501	492	12.3	3285	7.4	563	33.3	83	49.7	1996	5497
1923	4698	3998	700	14.9	3985	10.8	655	38.0	58	34.5	2323	6321
1924	5350	4712	637	11.9	4490	7.3	826	36.5	34	17.6	1840	6553
1925	5956	5404	552	9.3	4958	5.0	936	29.2	62	53.2	1790	7194
1926	5809	5342	467	8.0	4992	4.7	659	25.5	158	50.5	1675	7017

TABLE I.—*Qualifications of Physicians Licensed by State Medical Boards in Six Years*

Mar. No.	State	Graduates of Class A Medical Schools							Graduates of Class B Medical Schools							Graduates of Class C Medical Schools							Grads. of Misc. Colleges 6 Yrs.	Total Registrations 6 Yrs.	Mar. No.
		1921	1922	1923	1924	1925	1926	Total	1921	1922	1923	1924	1925	1926	Total	1921	1922	1923	1924	1925	1926	Total			
1	Alabama	37	28	46	40	43	77	271	7	8	5	4	1	6	31	1	0	0	0	1	0	2	24	328	1
2	Arizona	4	16	15	17	18	22	92	0	2	1	5	2	4	14	0	1	1	0	3	0	5	47	158	2
3	Arkansas	47	24	24	27	42	35	199	9	15	8	9	8	6	55	21	18	36	1	21	8	105	68	427	3
4	California	235	349	459	461	433	392	2,329	85	74	56	46	33	26	320	47	63	17	8	12	49	196	810	3,655	4
5	Colorado	54	62	59	49	63	85	372	9	8	6	7	10	8	48	25	14	21	17	18	44	139	131	690	5
6	Connecticut	69	64	62	94	97	86	472	7	6	2	3	9	4	31	66	74	27	0	1	0	168	59	739	6
7	Delaware	10	16	9	6	8	8	57	1	2	2	2	2	2	11	2	3	0	0	0	0	5	10	83	7
8	Dist. Columbia	45	59	66	76	104	102	452	0	0	2	3	1	3	9	1	4	5	3	3	3	19	47	527	8
9	Florida	28	42	60	117	347	165	759	5	3	4	7	35	6	60	1	1	1	4	2	3	12	115	946	9
10	Georgia	72	75	87	92	96	97	519	6	3	4	3	0	1	17	2	0	2	2	1	1	8	21	565	10
11	Idaho	12	15	7	12	8	21	75	5	3	2	4	2	0	16	0	1	0	0	0	0	1	17	109	11
12	Illinois	320	288	341	309	265	393	1,916	21	23	27	31	32	16	150	45	10	25	18	23	40	161	193	2,430	12
13	Indiana	81	53	111	116	133	122	616	10	4	10	20	8	8	60	0	0	1	1	3	0	5	86	767	13
14	Iowa	97	64	64	84	123	120	552	15	2	1	6	3	6	33	6	0	0	3	3	0	12	36	633	14
15	Kansas	71	56	55	71	81	106	440	7	10	11	8	3	4	43	4	4	21	2	2	0	33	71	587	15
16	Kentucky	63	41	54	71	78	85	392	10	11	6	8	6	13	54	5	4	3	2	2	1	17	50	513	16
17	Louisiana	74	54	68	78	79	85	438	3	3	3	3	1	0	13	1	2	0	0	1	3	7	17	475	17
18	Maine	32	29	29	55	41	41	227	2	0	2	3	3	1	11	0	1	0	0	0	0	1	33	272	18
19	Maryland	140	81	109	92	120	122	664	10	2	5	4	4	4	29	4	1	0	2	2	2	11	55	759	19
20	Massachusetts	153	178	138	190	114	183	956	4	2	3	5	3	1	18	42	51	59	46	31	55	284	107	1,365	20
21	Michigan	195	161	238	283	301	280	1,458	26	7	10	13	11	11	78	2	2	1	1	1	3	10	158	1,704	21
22	Minnesota	190	178	138	157	194	207	1,064	7	6	2	3	4	2	24	0	0	0	0	0	0	0	79	1,167	22
23	Mississippi	27	25	35	28	32	33	180	4	8	4	3	5	4	28	0	3	0	0	2	2	7	26	241	23
24	Missouri	136	109	148	182	160	147	882	14	4	16	0	2	5	41	5	7	38	1	1	0	52	50	1,025	24
25	Montana	14	10	15	22	19	17	97	0	0	3	1	3	1	8	0	0	0	0	0	0	0	13	118	25
26	Nebraska	82	52	108	92	132	108	574	12	5	3	0	1	0	21	5	0	0	0	0	2	7	35	637	26
27	Nevada	1	5	5	8	8	14	41	0	3	3	1	0	1	8	0	5	6	4	1	1	17	37	103	27
28	New Hampshire	10	8	9	16	17	19	79	1	1	0	2	0	1	5	1	1	0	0	0	0	2	16	102	28
29	New Jersey	113	99	152	81	51	46	542	15	5	9	7	3	2	41	1	5	1	1	0	0	8	171	762	29
30	New Mexico	20	15	14	7	11	11	78	3	5	3	3	1	2	17	0	0	1	0	0	1	2	67	164	30
31	New York	758	630	648	703	836	874	4,449	73	53	39	62	74	67	368	1	5	1	0	1	0	8	553	5,378	31
32	North Carolina	76	52	86	109	110	118	551	5	4	13	5	3	0	30	1	0	2	1	0	1	5	64	650	32
33	North Dakota	10	10	13	8	28	28	97	0	0	3	2	1	0	6	0	0	0	0	0	0	0	13	116	33
34	Ohio	189	188	250	302	321	347	1,597	84	46	25	33	36	11	235	3	1	0	1	2	0	7	197	2,036	34
35	Oklahoma	50	32	47	33	56	67	285	10	15	11	5	3	4	48	26	6	4	2	1	0	39	83	455	35
36	Oregon	19	28	36	44	77	63	267	1	1	5	6	4	1	18	2	1	1	1	0	1	6	49	340	36
37	Pennsylvania	289	261	229	304	325	352	1,760	16	22	17	29	20	45	149	14	5	0	0	0	4	23	102	2,034	37
38	Rhode Island	15	22	25	17	20	20	119	1	0	0	0	0	0	1	1	0	0	0	0	0	1	30	151	38
39	South Carolina	31	24	39	39	45	42	220	2	2	4	2	3	0	13	3	0	1	0	1	0	5	13	251	39
40	South Dakota	17	15	23	23	20	21	119	2	2	0	0	1	2	7	1	0	0	2	0	2	5	32	163	40
41	Tennessee	69	35	110	113	116	142	585	30	26	1	2	0	2	61	0	2	0	1	2	0	5	11	662	41
42	Texas	116	108	136	94	163	110	727	18	22	19	0	16	0	75	34	8	18	2	23	4	89	147	1,038	42
43	Utah	21	24	23	17	23	40	148	1	1	0	0	1	0	3	4	0	0	0	0	0	4	12	167	43
44	Vermont	29	21	26	34	56	40	206	0	0	0	0	0	1	1	0	0	0	0	0	0	0	16	223	44
45	Virginia	75	70	86	99	111	123	564	2	4	2	2	1	2	13	2	2	2	1	2	1	10	24	611	45
46	Washington	73	38	45	65	86	97	404	19	7	11	13	10	4	64	2	0	0	1	3	1	7	160	635	46
47	West Virginia	48	66	91	71	71	74	421	8	5	4	1	3	2	23	1	4	0	0	0	0	5	60	509	47
48	Wisconsin	87	88	87	140	134	115	651	12	5	9	28	9	9	72	9	1	3	0	2	1	16	87	826	48
49	Wyoming	10	5	8	14	11	12	60	1	3	3	0	0	1	8	1	5	0	1	0	0	7	18	93	49
50	U. S. Territories and Possessions	31	23	22	34	25	28	163	2	1	1	0	1	2	7	2	0	0	0	0	0	2	363	535	50
	Totals	4,445	3,996	4,755	5,196	5,852	5,942	30,186	585	444	380	404	382	301	2,496	394	315	298	129	171	233	1,540	4,683	38,905	

Of the 105 graduates of low grade colleges licensed in Arkansas during the last six years, all but two were licensed by the Eclectic Board of Medical Examiners.

During the six years, 196 graduates of inferior colleges were licensed in California, including 120 osteopaths who were licensed as physicians. None were examined by the Board of Medical Examiners since 1922 when a separate osteopathic board was created. The latter board licenses some osteopaths as physicians and surgeons, and in 1926 licensed 47.

Of the 139 class C graduates licensed in Colorado, 53 were osteopaths who were licensed with the same privileges as physicians. Since 1923, the Connecticut Eclectic Board has certified only one graduate of a class C college, who was refused a license by the commissioner of health. One undergraduate was licensed by reciprocity, who is ranked in class C.

Illinois and Massachusetts are two of the states which harbor class C medical colleges and examine their graduates, which accounts for the larger numbers of class C graduates licensed in those states. In Missouri although having three class C colleges, the board refuses to recognize their graduates. There were 38 class C graduates licensed in 1923, as a result of a change in the practice law removing the word "reputable" as referring to medical colleges. The amendment, however, was promptly repealed, so that only one class C candidate each year was registered in 1924 and 1925, none being licensed in 1926.

Of the 89 graduates of low grade institutions licensed in Texas during the six years, only 17 were by examination, while 72 were by reciprocity. Of those licensed, 16 were osteopaths who are given the same privileges as physicians.

cians licensed in 1926, however (table 5) include a larger percentage of those having higher educational and professional qualifications. The percentage coming from class A medical schools has increased from 58.7 in 1918 to 84.5 in 1926.

TOTALS EXAMINED IN FIVE YEARS

Table E shows the number registered and the number rejected in each state by examination for each of the last five years. A comparison of this table with the statistics in the last educational number of THE JOURNAL (Aug. 21, 1926, p. 572, table 11) shows—what would be expected—that the states having the largest numbers of medical graduates examined the largest numbers of physicians. New York leads, having examined 4,548 candidates in five years, followed by Illinois, with 2,036. Altogether, 25,806 physicians were *examined* by state boards in five years, an average of 5,161 each year, and of these, 4,591, or 89 per cent, were licensed each year.

TOTAL REGISTRATION IN 1926

The tables thus far described have referred only to those registered by examination. Table F, however, shows the total number who received licenses in each state, including those registered by reciprocity and under various exemption clauses. Altogether, 7,017 physicians were registered by all methods during 1926, or 177 less than in 1925. The total registered in 1918—4,185—was the lowest number registered in any year since the publication of these statistics was begun, owing undoubtedly to the war. In 1906 the total number registered was 7,865, the largest number in any year.

More than 100 were registered by all methods in twenty-five states; more than 200 in eight, and more than 300 in six, the largest numbers being 1,039 in New York, 469 in Illinois, 530 in California, and 421 in Pennsylvania.

Of the 530 licensed in California, 255, or 48.1 per cent, were registered by the endorsement of licenses granted by other states. Three medical boards examined and licensed osteopaths as "physicians and surgeons." Massachusetts licensed twenty-six, Colorado twelve, and Texas three. In California, forty-seven osteopaths were licensed as physicians and surgeons by the osteopathic board. Altogether eighty-eight osteopaths—graduates of colleges decidedly inferior to the lowest grade medical schools—were licensed as physicians and surgeons during 1926.

TABLE J.—*Physicians Registered Through Reciprocity and Endorsement by State Examining Boards During 1926*

Number	....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
	Total Regis. by Recip. Ex. State	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U.S.A., U.S.N., etc	Nat. Bd. Med. Ex.	U.S. Territories	Canadian and Foreign
Alabama	54	..	..	..	..	1	..	..	..	..	10	..	2	..	..	..	2	13	..	..	..	1	..	6	..	..	1	..	..	..	..	..	..	..	3	..	2	..	..	..	..	11	..	..	..	..	..	..	..	..	1	1	..	....
Arizona	20	..	..	1	..	..	..	..	..	..	1	..	1	2	1	..	..	..	..	..	..	1	..	..	5	..	..	..	..	..	1	2	..	..	..	1	..	..	..	..	..	1	1	..	..	1	..	..	..	..	..	1	..	....
Arkansas	25	3	..	..	..	..	..	..	..	..	1	..	1	..	..	1	1	5	..	..	..	..	1	2	..	..	1	..	..	..	..	..	..	..	..	2	..	..	..	..	..	5	2	..	..	..	..	..	..	..	..	..	..	....
California	255	..	..	3	..	5	..	..	1	..	1	3	27	11	16	6	4	..	4	8	5	10	7	2	18	5	18	2	..	2	..	22	..	2	8	1	11	8	..	1	2	1	9	2	..	1	4	1	8	3	11	..	2	....
Colorado	63	..	..	..	2	..	1	..	1	..	1	..	5	3	2	5	3	..	..	2	1	1	..	2	6	..	11	1	..	..	..	5	1	..	3	..	..	1	..	..	..	2	1	1	..	1	..	..	1	..	..	..	....
Connecticut	47	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	..	2	..	1	9	2	..	..	1	..	..	..	1	1	..	9	..	..	2	..	..	1	1	..	..	..	..	..	5	..	..	..	..	..	9	..	....
Delaware	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	....
Dist. of Col.	18	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	4	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	..	2	..	..	..	..	3	..	..	..	4	..	..	..	..	..	..	....
Florida	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Georgia	24	..	..	..	..	..	..	1	..	..	..	..	..	3	..	..	1	..	4	..	1	1	..	..	1	..	..	..	..	..	..	..	..	..	..	1	3	..	1	..	5	..	..	1	..	..	..	..	..	..	1	..	....
Idaho	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	3	..	..	..	..	..	..	2	..	..	3	..	..	..	..	..	..	..	....
Illinois	58	1	..	1	2	..	..	..	..	..	..	..	..	2	3	1	1	1	..	3	..	4	5	1	..	..	4	..	..	..	..	..	..	..	4	..	..	2	..	..	..	2	2	1	..	1	1	1	7	..	1	7	..	....
Indiana	52	1	..	..	1	1	..	..	1	..	2	..	20	..	1	1	4	..	..	1	..	4	1	..	2	..	..	..	..	..	..	2	1	..	7	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	....
Iowa	35	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	1	..	3	3	..	..	..	12	..	1	..	..	..	..	..	1	..	..	1	..	..	..	..	..	1	..	..	..	..	..	1	..	5	..	....
Kansas	36	..	..	1	2	..	..	..	2	..	..	..	2	1	3	..	3	..	..	..	..	2	1	..	..	..	11	..	1	..	..	..	..	..	1	3	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	1	..	....
Kentucky	30	..	..	..	1	..	..	1	..	..	..	..	1	4	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	1	3	..	..	..	..	..	..	7	1	..	..	..	..	1	1	..	1	5	..	....
Louisiana	11	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	2	4	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Maine	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	2	..	..	..	..	2	..	....
Maryland	28	..	..	..	..	..	..	7	..	1	..	..	1	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	2	..	2	..	2	..	..	5	..	2	1	..	..	2	..	....
Massachusetts	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Michigan	92	..	..	..	2	1	..	..	3	..	2	..	19	4	3	1	2	..	2	6	2	..	3	..	4	2	4	..	..	1	..	..	..	..	16	..	1	4	..	1	..	2	..	..	2	..	..	1	4	..	..	..	....
Minnesota	62	..	..	..	5	..	..	..	..	..	1	..	6	..	5	..	1	..	..	1	..	4	..	1	..	..	9	..	1	1	..	..	1	3	2	..	..	1	..	..	..	1	1	..	..	3	..	1	4	..	10	..	....
Mississippi	27	..	..	1	..	..	..	..	1	..	1	..	3	..	1	..	2	4	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	10	1	..	..	..	..	..	..	..	..	..	....
Missouri	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Montana	6	1	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Nebraska	12	..	..	..	2	..	..	..	..	..	..	..	..	..	4	1	..	..	..	..	..	1	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	....
Nevada	17	..	..	..	7	1	..	..	..	..	..	..	4	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	1	1	..	..	..	....
N. Hampshire	18	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	2	..	7	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	1	1	..	..	..	..	..	4	..	..	..	..	..	..	..	....
New Jersey	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
New Mexico	15	..	1	1	..	1	..	..	..	1	..	..	1	..	2	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	1	..	..	2	1	..	..	..	..	..	1	1	..	..	..	..	1	..	..	..	..	....
New York	152	..	..	3	3	5	..	2	..	..	1	4	..	1	1	1	..	6	11	6	1	..	..	..	1	..	..	..	1	17	..	..	..	..	12	..	..	8	1	..	1	1	1	1	10	..	2	3	..	..	33	8	6
No. Carolina	33	3	..	..	..	1	..	1	..	..	..	..	1	..	..	1	..	..	..	3	..	..	7	..	1	..	1	..	..	1	..	3	..	..	..	..	..	2	..	5	..	..	2	..	..	5	..	1	..	..	..	1	..	1
No. Dakota	11	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	7	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	....
Ohio	92	1	..	..	2	2	..	1	3	..	..	..	5	2	3	3	10	1	1	6	..	16	..	..	..	..	4	..	..	1	..	7	..	..	..	..	..	9	..	..	..	4	..	..	1	3	..	6	..	..	1	..	....
Oklahoma	29	..	..	2	..	..	..	..	..	..	..	..	4	..	1	3	1	1	..	1	..	1	..	2	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	7	..	..	..	..	..	..	..	..	..	....
Oregon	17	..	..	..	2	..	..	..	..	..	..	1	..	..	1	1	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	1	1	..	1	..	..	2	..	..	..	..	1	1	..	..	4	..	..	..	..	..	....
Pennsylvania	50	..	..	..	1	1	..	..	1	..	..	..	..	1	..	1	..	..	1	4	1	4	1	..	..	..	..	..	..	3	..	1	2	..	1	..	..	..	..	..	..	..	..	1	..	..	2	1	..	2	21	..	....
Rhode Island	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
So. Carolina	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
So. Dakota	9	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	....
Tennessee	10	..	..	1	..	..	..	..	..	1	..	..	2	..	..	..	..	1	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	....
Texas	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Utah	29	..	..	..	4	..	..	1	..	..	..	..	3	..	5	..	1	1	..	..	..	1	..	..	..	..	3	..	..	..	..	1	..	..	3	..	..	4	..	..	..	..	..	..	..	..	..	..	1	..	1	..	....
Vermont	5	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	....
Virginia	32	..	..	..	..	..	..	4	..	1	..	..	1	1	..	..	..	..	..	2	..	..	1	..	..	..	..	..	..	..	..	1	5	..	..	1	..	..	..	1	..	..	3	1	1	..	..	3	..	1	..	1	4	..	....
Washington	92	..	..	..	6	..	..	..	..	..	..	2	18	3	7	..	1	1	..	..	..	..	3	13	..	2	7	5	..	..	..	2	..	2	4	..	8	..	..	..	..	1	1	1	1	..	..	..	..	1	..	3	..	....
West Virginia	31	1	..	..	1	..	..	..	..	2	..	..	4	1	..	..	2	1	..	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	2	..	..	..	..	1	1	..	..	6	..	..	..	1	..	....
Wisconsin	35	..	..	..	1	1	..	..	..	1	..	..	14	..	2	1	..	..	..	1	..	..	1	1	..	..	2	..	..	..	..	1	..	2	..	1	..	1	..	..	..	3	..	..	..	1	..	..	..	..	..	....
Wyoming	11	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	3	..	1	..	..	..	..	..	2	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	....
U.S. Terr. and Possessions	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	....
Totals	1667	13	1	10	46	19	7	2	29	0	28	6	153	41	68	33	41	34	13	60	38	68	56	21	54	14	90	3	4	31	1	65	13	10	78	13	24	59	4	11	4	71	33	12	18	41	19	22	35	4	18	112	10	7
Number	....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53

This table shows the number of physicians registered in each state through the endorsement of other state licenses during 1926. Read from left to right, it shows the total number of physicians registered in the state named and the number of such candidates coming from each of the states named at the top of the various columns. Read from above downward, the figures show the number of physicians who left the state named at the head of the column and went to each of the states named at the left in the corresponding lines, and at the bottom is given the total number of candidates leaving the state to go elsewhere. This bottom line shows also the states in which physicians who registered through reciprocity obtained their original licenses. The total number licensed by reciprocity was 1,667, or 117 less than in 1925.

TOTAL REGISTRATION IN FIVE YEARS

Table G permits the reader to note the registrations in each state for the last five years. In the totals registered there was an increase during the first four years, but a slight decrease in the last year.

In 1926, the total registered was 7,017, a decrease of 177 since 1925, which shows a reaction to the general increases in the numbers registered in 1925. Marked decreases since 1925 are noted in Florida and Texas, while increases are noteworthy in Illinois, Massachusetts and Pennsylvania. During the last five years New York registered 4,500, the highest number, followed by California with 3,074, Illinois with 2,021, Ohio with 1,710, Pennsylvania with 1,700, and Michigan with 1,457. The three lowest registrations are Delaware with sixty-nine, Wyoming with seventy-five and New Hampshire with eighty-four.

TABLE 5.—*Source of Physicians Licensed in Ten Years*

Year	From Medical Colleges in						Miscellaneous and Foreign		Total
	Class A		Class B		Class C				
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	
1917	3,369	62.1	988	18.2	297	4.3	769	14.4	5,423
1918	2,456	58.7	682	16.3	342	8.2	705	16.8	4,185
1919	4,368	66.4	872	13.2	278	4.2	1,066	16.2	6,584
1920	4,597	70.2	631	9.6	275	4.2	1,054	16.0	6,557
1921	4,445	70.0	585	9.2	394	6.2	924	14.6	6,348
1922	3,999	72.8	444	8.1	316	5.7	738	13.4	5,497
1923	4,755	75.2	380	6.0	299	4.8	887	14.1	6,321
1924	5,196	79.3	404	6.2	129	1.9	824	12.6	6,553
1925	5,852	81.3	382	5.3	171	2.4	789	11.0	7,194
1926	5,942	84.5	301	4.3	233	3.3	541	7.7	7,017
Totals	44,979	73.0	5,669	9.2	2,734	4.3	8,297	13.5	61,679

who were licensed as physicians in California, 47; Colorado, 12; Massachusetts, 26, and Texas, 3.

As will be noted, the largest number of class C graduates was licensed in Massachusetts with 55, followed by California with 49, Colorado with 44, Illinois with 40, and Arkansas with 8. New York registered 67 class B graduates—the largest number—followed by Pennsylvania with 45, California with 26, Illinois with 16, and Kentucky with 13. In 1926, only class A graduates were registered by either examination or reciprocity in Idaho, North Dakota, Rhode Island, South Carolina and Utah.

Of the 7,017 physicians registered by all methods in 1926, 5,942, or 84.5 per cent, graduated from class A medical colleges; 30, or 4.3 per cent, from class B colleges; 233, or 3.3 per cent, from class C colleges, and 541, or 7.7 per cent, graduated prior to 1907 when the first classification of medical colleges was prepared, or came from foreign medical colleges. By comparing these figures with the results for the previous seven years as shown in table 4, it is noteworthy that the *percentages* from class B and class C colleges are steadily decreasing, and the percentage of graduates of class A colleges is increasing.

TRAINING OF PHYSICIANS REGISTERED IN SIX YEARS

Table I is of especial interest and shows the character of the physicians registered during the last six years. It is noteworthy that of the 38,905 physicians registered in six years, 30,186, or 77.7 per cent, were graduates of class A medical schools; 2,496, or 6.4 per cent, were graduates of class B schools, and 1,540, or 4.1 per cent, were graduates of class C schools. Graduates of foreign medical schools and those who graduated prior to 1907 from medical schools which, since that year, have not always been rated in class A have been grouped under "Miscellaneous Graduates"; and during the six years, 4,683 of these graduates were registered.

TABLE K.—*Reciprocal Registration in Five Years (Showing What States Issued Original Licenses)*

State	Physicians Going from States Named During					Total
	1922	1923	1924	1925	1926	
Alabama	19	25	17	18	13	92
Arizona	12	9	2	4	1	28
Arkansas	43	50	15	31	10	149
California	28	30	16	31	46	151
Colorado	15	21	16	17	19	88
Connecticut	11	12	2	6	7	38
Delaware	12	5	1	1	2	21
District of Columbia	27	25	17	25	29	123
Florida	1	4	8	2	0	15
Georgia	34	58	55	34	28	209
Idaho	10	20	18	15	6	69
Illinois	246	276	248	181	153	1,104
Indiana	44	49	42	46	41	222
Iowa	65	82	73	73	68	361
Kansas	41	52	30	33	33	189
Kentucky	40	51	46	34	41	212
Louisiana	33	50	27	48	34	192
Maine	14	14	11	19	13	71
Maryland	64	60	55	49	60	288
Massachusetts	38	37	31	43	38	187
Michigan	70	50	64	57	68	309
Minnesota	40	57	59	58	56	270
Mississippi	24	27	26	19	21	117
Missouri	126	120	63	66	54	429
Montana	23	29	28	20	14	114
Nebraska	57	75	80	80	90	382
Nevada	5	5	8	3	3	24
New Hampshire	7	5	5	4	4	25
New Jersey	25	9	16	20	31	101
New Mexico	3	6	4	2	1	16
New York	127	144	92	72	65	500
North Carolina	8	14	10	14	13	59
North Dakota	18	17	18	10	10	73
Ohio	70	62	73	72	78	355
Oklahoma	27	44	30	38	13	152
Oregon	26	20	18	24	24	112
Pennsylvania	90	118	82	70	59	419
Rhode Island	6	4	1	5	4	20
South Carolina	24	21	17	16	11	89
South Dakota	9	12	16	11	4	52
Tennessee	75	68	70	84	71	368
Texas	34	54	35	42	33	198
Utah	17	12	16	11	12	68
Vermont	13	24	16	14	18	85
Virginia	46	43	44	39	41	213
Washington	37	34	19	29	19	136
West Virginia	24	18	24	31	22	119
Wisconsin	27	31	27	31	35	151
Wyoming	4	10	3	7	4	28
Army, Navy, P. H. Service	52	45	34	33	18	182
National Board of Medical Examiners	15	22	49	67	112	265
U. S. Territories and Possessions	8	3	5	14	10	40
Foreign and Misc.	10	11	5	11	7	44
Totals	1944	2144	1787	1784	1667	9326

This table shows that 9,326 physicians were registered through reciprocity during the last five years, an average of 1,865 each year. Since 1923 there has been a reduction each year. Note the increasing numbers from the National Board of Medical Examiners. Of the 9,326 candidates registered during the five years, 1,104 obtained their original licenses in Illinois, the next largest number being 500 in New York.

MEDICAL TRAINING OF APPLICANTS LICENSED IN 1926

Table H is of especial interest, since it shows for each state the numbers of candidates coming from medical schools rated in classes A, B and C, thereby indicating the character of the medical training of the candidates licensed during 1926. Of the 7,017 candidates registered, 5,342 were licensed by examination and 1,675 by reciprocity or on presentation of acceptable credentials. Those who graduated prior to 1907, when the first classification of medical colleges was completed and graduates of foreign colleges are included among graduates of "Miscellaneous Colleges." Among the graduates of class C schools are included eighty-eight osteopaths,

The largest number of candidates registered during the six years who graduated from class C colleges was 284 in Massachusetts, followed by California with 196, Connecticut[1] with 168, Illinois with 161, Colorado with 139, Arkansas with 105, and Texas with 89.

The number of class C graduates licensed in each of several states during the six years should be noted. In Arkansas, the number licensed ranged from eight to thirty-six each year but dropped abruptly to one in 1924 (an undergraduate), as the result of the forced inactivity of the Kansas City Col-

1. In Connecticut most of these licenses have been revoked; the action is being tested in the courts, but thus far the revocations have been sustained.

lege of Medicine and Surgery. Arkansas licensed twenty-one class C graduates in 1925, including seventeen from the now defunct Kansas City College of Medicine and Surgery, only four of whom obtained their degrees in 1925. Of the eight class C candidates licensed in Arkansas in 1926, four presented diplomas from the nominally electic Kansas City College of Medicine and Surgery and one graduated from the regular St. Louis College of Physicians and Surgeons.

In Connecticut, only a few such candidates were licensed each year until, in 1921, 1922 and 1923, the numbers bounded up to sixty-six, seventy-four and twenty-seven, respectively. The eclectic board had ceased to limit its acceptance of graduates of eclectic colleges and had accepted all who applied, including graduates of homeopathic and regular schools. Since 1923, however, only one class C graduate has been licensed—a result of the diploma mill inquiry. In Illinois, the numbers of class C graduates licensed are increasing, as that state harbors the Chicago Medical School, a typical class C institution. In Massachusetts there are two class C colleges—the board not having the authority to decide whether or not a medical school is "reputable." Missouri still has three of the class C schools, in spite of the fact that the board persistently refused recognition to those schools until late in 1922 a change in the practice law forced the board to examine class C graduates—hence the larger number in 1923. Even after the board's power was restored and the low grade medical schools were again supposedly refused recognition, two such candidates have been registered.

Registration by Reciprocity

Table J shows the numbers of physicians registered in 1926 without examination on presentation of satisfactory credentials, which included a license issued by some other state board or by the National Board of Medical Examiners. Some state boards—Arizona, California, Colorado, Delaware, Maryland, New Hampshire, New Jersey and North Carolina, as examples—accept a physician's credentials if satisfactory, whether or not the state board issuing the original license returns the favor. The registration without examination of diplomates of the National Board of Medical Examiners has increased from only 2 in 1917 to 112 in 1926. Altogether, 1,667 physicians were licensed in 1926 on the basis of "reciprocity"—without being compelled to undergo a second trying examination.

Table K shows what state boards granted the original licenses of those registered elsewhere under the reciprocity provision during the last five years. Of the 9,326 physicians licensed through reciprocity during the last five years, the largest number coming from any one state was 1,104 who obtained their original licenses in Illinois. Although New York has a larger number of medical college graduates each year than Illinois, only 500 physicians obtained original licenses in New York and registered elsewhere through reciprocity in the last five years. This is accounted for by the fact that Illinois has reciprocal relations with twenty-eight states, while New York has relations with only eight.

Improved Standards of Licensure

Table L shows the states that have adopted one or two years of college work as a minimum standard of preliminary education for those who seek the license to practice medicine, and also the states that require a year's internship in a hospital. The first, third and fifth columns show, respectively, when the requirements affected students matriculating in medical colleges, and the second, fourth and sixth columns give the years in and after which all applicants for licenses are affected by the requirement. This table shows the rapidity with which higher requirements of preliminary education have been adopted by state boards since 1908. Prior to that year, no state was requiring as a standard of preliminary education more than a high school education. There are now forty-two states that have adopted the higher standard, and thirty-nine of these require two years of college work. It is understood that in every state the college work must have included courses in physics, chemistry and biology. Although the term "two years of college work" is mentioned, it is the real education obtained in those years that is asked for. That specification is used in the absence of a more fitting term describing the desired qualifications. As shown in table L (and the footnotes), in the District of Columbia, Massachusetts and Wyoming no standards of preliminary education have been legally authorized or adopted.

There are twelve states in which an internship in a general hospital is required as an essential qualification for the license to practice medicine. There are now more than enough hospitals seeking interns to provide places for all graduates each year, so that other state boards would be justified in requiring all applicants to possess this additional qualification.

Table L.—*State Requirements of Preliminary Education*

There are now forty-two states (counting Alaska Ter.) which have adopted requirements of preliminary education in addition to a standard four-year high school education. Of this number thirty-nine now require the two year standard. Twelve states have adopted also the requirement of a hospital internship as an essential for the license. These states, and the time the higher requirements became or become effective are as follows:

State Examining Board of	One Year of College Work		Two Years of College Work		A Hospital Internship	
	Affects Students Matriculating	Affects All Graduates	Affects Students Matriculating	Affects All Graduates	Affects Students Matriculating	Affects All Applicants
Alabama	.....	....	1915-16	1919	.....	....
Alaska	1914-15	1918	1918-19	1922	1912-13	1917
Arizona	1914-15	1918	1918-19	1922	.....	....
Arkansas [1]	1915-16	1919	1918-19	1922	.....	....
California	1915-16	1919	.....	....	.....	....
Colorado	1908-09	1912	1910-11	1914	.....	....
Connecticut [1]	1915-16	1919	.....	....	.....	....
Delaware*	.....	....	.....	....	1919-20	1924
Dist. of Columbia†	.....	....	.....	....	.....	....
Florida	1914-15	1918	1918-19	1922	.....	....
Georgia	.....	....	1918-19	1922	.....	....
Idaho	.....	....	1915-16	1919	.....	....
Illinois	1915-16	1919	1919-20	1923	1918-19	1923
Indiana	1910-11	1914	1911-12	1915	.....	....
Iowa	.....	....	1911-12	1915	1919-20	1924
Kansas	1910-11	1914	1918-19	1922	.....	....
Kentucky	1914-15	1918	1918-19	1922	.....	....
Louisiana	1915-16	1919	1918-19	1922	.....	....
Maine	1915-16	1919	1916-17	1920	.....	....
Maryland	1914-15	1918	1918-19	1922	.....	....
Massachusetts†	.....	....	.....	....	.....	....
Michigan	1914-15	1918	1918-19	1922	1917-18	1922
Minnesota	.....	....	1908-09	1912	.....	....
Mississippi	1915-16	1919	1919-20	1923	.....	....
Missouri*	.....	....	.....	....	.....	....
Montana	1914-15	1918	1918-19	1922	.....	....
Nebraska*	.....	....	.....	....	.....	....
Nevada*	.....	....	.....	....	.....	....
New Hampshire	1914-15	1918	1915-16	1919	.....	....
New Jersey	1915-16	1919	1917-18	1921	1911-12	1916
New Mexico	1914-15	1918	1918-19	1922	.....	....
New York	1917-18	1921	1918-19	1922	.....	....
North Carolina	1914-15	1918	1918-19	1922	.....	....
North Dakota	.....	....	1908-09	1912	1913-14	1918
Ohio*	.....	....	.....	....	.....	....
Oklahoma	1914-15	1918	1917-18	1921	.....	....
Oregon	.....	....	1920-21	1924	.....	....
Pennsylvania	1914-15	1918	.....	....	1909-10	1914
Rhode Island	1914-15	1918	1918-19	1922	1912-13	1917
South Carolina	.....	....	1918-19	1922	.....	....
South Dakota	1908-09	1912	1911-12	1915	1920-21	1925
Tennessee	1916-17	1920	1918-19	1922	.....	....
Texas	1914-15	1918	1922-23	1926	.....	....
Utah	1913-14	1917	1922-23	1926	1921-22	1926
Vermont	1913-14	1917	1918-19	1922	.....	....
Virginia	1914-15	1918	1917-18	1921	.....	....
Washington	1914-15	1918	1918-19	1922	1914-15	1919
West Virginia	1917-18	1921	1921-22	1925	.....	....
Wisconsin	.....	....	1915-16	1919	.....	....
Wyoming†	.....	....	.....	....	.....	....

* Require a four-year high school education or its equivalent.
† No fixed standard.
1. The higher standards in Arkansas and Connecticut are evidently not enforced by the sectarian licensing boards of those states.

Improvements in Licensure Since 1904

In table M, the advances in standards of licensure are shown for all states since 1904. The most marked increase is in regard to the requirement of college work in forty-two states—referred to also in table L. A still greater increase in shown in the number of states—now forty-nine—which are refusing to recognize low grade medical colleges. One other

state, Arkansas, could be added to the two lists referred to, were it not for the eclectic board, which is still licensing graduates of inferior schools.

Although marked improvements have been made in state requirements for licensure, nevertheless there is still room for improvement, as indicated by the last column. The greatest needs are for a wider requirement of (*a*) the hospital intern year; (*b*) two years of premedical college work, and (*c*) practical tests in the licensing examinations. The

TABLE M.—*Advances in State License Requirements in Twenty Years*

Requirement or Provision	States Having Provision for			States Still Having No Provision for
	1904	1926	Increase	
Preliminary Education—				
Any requirement	20	46	26	4[1]
A standard four-year high school education or higher	10	46	36	4[1]
One year or more of college work	0	42	42	8[2]
Two years of college work as a minimum	0	39	39	11[3]
That all applicants be graduates of a medical college	36	49	13	1[4]
That all applicants undergo an examination for license	45	50	5	0
Hospital intern year required	0	12[5]	12	38
Full authority by board to refuse recognition to low-grade colleges	14	46	32	4[5]
Boards refusing to recognize low-grade colleges	27	44	17	6[6]
Reciprocal relations with other states	5	49	44	1
Single boards of medical examiners	36	45	9	5[7]

1. District of Columbia, Massachusetts, Wyoming and (because of its eclectic board) Arkansas.
2. Delaware, District of Columbia, Massachusetts, Missouri, Nebraska, Nevada, Ohio, Wyoming.
3. See table L and footnotes.
4. Colorado.
5. Arkansas (because of eclectic board), Colorado, District of Columbia and Massachusetts.
6. Alaska, Connecticut, Florida, Massachusetts, Missouri, Rhode Island. To this list should be added the outlying territories of Canal Zone and the Philippine Islands, which have no provision for reciprocity. Porto Rico has recently established reciprocal relations with New York.
7. Multiple boards still remain in Arkansas (3), California (2), Connecticut (3), Louisiana (2) and Maryland(2).

states in which the boards are making a really effective use of practical examinations are Illinois, Massachusetts, Minnesota, North Dakota, Ohio and South Dakota. That method is being followed to a certain extent in a few other states.

CONCLUSION

In the publication of these statistics, the endeavor has been to show the actual facts, a knowledge of which is always beneficial. Again acknowledgments are tendered to the officers of state licensing boards for their ready cooperation and the complete reports they have furnished. The information here published should be of service to the medical colleges and the state boards as well as to the public.

NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners was organized in 1915. It now consists of twenty-one members, including the three Surgeon Generals of the Army, Navy and Public Health Service, and one other representative of each of those services, one representative of the state medical licensing boards and fourteen members appointed at large. The personnel of the board at present is as follows:

Rear Admiral Edward R. Stitt, Surgeon General, United States Navy, president; Major Gen. Merritte W. Ireland, Surgeon General, United States Army; Surg. Gen. Hugh. S. Cumming, United States Public Health Service; Com. Charles M. Oman, Col. Joseph F. Siler, Surg. George W. McCoy, Dr. Walter E. Garrey, Dr. Walter L. Bierring, Dr. David A. Strickler, Mr. John G. Bowman, Dr. Lewis A. Conner, Dr. J. M. T. Finney, Dr. W. S. Leathers, Dr. O. H. Perry Pepper, Dr. J. Whitridge Williams, Dr. Howard T. Karsner, Dr. A. S. Begg, Dr. Joseph B. DeLee, Dr. Otto Folin and Dr. Louis B. Wilson. The secretary is Dr. John S. Rodman and the managing director is Mr. E. S. Elwood.

Up to Dec. 31, 1921, eleven examinations had been held as follows:

Date of Examination	Where Held	Total Examined	Passed	Failed	Percentage Failed
Oct., 1916	Washington	10	5	5	50.0
June, 1917	Washington	12	9	3	33.3
Oct., 1917	Chicago	28	22	6	21.5
Jan., 1918	New York	20	18	2	10.0
Apr., 1918	Ft. Riley, Ft. Oglethorpe	23	18	5	26.1
Dec., 1918	Chicago, New York	16	15	1	6.3
June, 1919	Philadelphia	52	51	1	1.9
Feb., 1920	Chicago, St. Louis	48	36	12	25.0
May, 1920	Philadelphia	60	46	14	23.3
Feb., 1921	Rochester, Minn.	16	11	5	31.3
June, 1921	Boston	40	37	3	7.5
	Totals	325	268	57	14.4

Following the completion of each examination shown in the table, those who passed were granted the board's certificate, a total by Dec. 31, 1921, of 268.

NEW METHODS ADOPTED

Since 1922, however, the examinations have been divided in three parts, as follows: Part I, a written examination in the six fundamental medical sciences: anatomy, including histology and embryology; physiology; physiologic chemistry; general pathology; bacteriology; materia medica, and pharmacology. Part II, a written examination in medicine, including pediatrics, neuropsychiatry and therapeutics; surgery, including applied anatomy, surgical pathology and surgical specialties; obstetrics and gynecology; public health, including hygiene and medical jurisprudence. Part III, a practical examination in each of the following four subjects: (*a*) clinical medicine, including medical pathology, applied physiology, clinical chemistry, clinical microscopy and dermatology; (*b*) clinical surgery, including applied anatomy, surgical pathology, operative surgery and the surgical specialties of the diseases of the eye, ear, nose and throat; (*c*) obstetrics and gynecology; (*d*) public health, including sanitary bacteriology and the communicable diseases.

Parts I and II are written examinations held in any class A medical school, and part III is an entirely practical and clinical examination given by subsidiary boards in the following sixteen cities:

Baltimore	Denver	Nashville	Portland (Ore.)
Boston	Galveston	New Orleans	St. Louis
Chicago	Iowa City	New York	San Francisco
Cleveland	Minneapolis	Philadelphia	Washington

The fees are as follows: registration fee, $5; part I, $10; part II, $15; part III, $45.

EXAMINATIONS IN PART I

Three examinations in part I were held in 1926, as follows:

Date of Examination	Total Examined	Passed	Incomplete	Failed	Percentage Failed
February, 1926	143	117	5	21	14.7
June, 1926	334	244	54	36	10.8
September, 1926	148	75	45	28	18.9
Totals, 1926	625	436	104	85	13.6
1925	608	400	50	158	26.0
1924	591	415	69	107	18.1
1923	507	349	77	81	16.2
1922	388	263	58	67	17.3
Totals	2,719	1,863	358	498	18.3

Altogether, 625 candidates were examined in 1926, as compared with 608 in 1925, 591 in 1924, 507 in 1923 and 388 in 1922. During the last five years, under the new plan, 2,719 candidates were examined, or more than eight times as many as were examined in the six years of the old plan—from 1916 to 1921. Of all those examined in part I during the last five years, 498, or 18.3 per cent, failed.

EXAMINATIONS IN PART II

Three examinations in part II were held in 1926, as follows:

Date of Examination	Total Examined	Passed	Incomplete	Failed	Percentage Failed
February, 1926	84	75	...	9	10.7
June, 1926	222	203	...	19	8.6
September, 1926	64	56	1	7	10.9
Totals, 1926	370	334	1	35	9.5
1925	342	309	...	33	9.6
1924	267	227	...	40	14.9
1923	192	170	2	20	10.4
1922	109	90	...	19	17.4
Totals	1,280	1,130	3	147	11.5

During 1926, 370 candidates were examined in part II, as compared with 342 in 1925, 267 in 1924, 192 in 1923, and 109 in 1922. Altogether, 1,280 candidates were examined during the five years, of whom 147, or 11.5 per cent, failed.

EXAMINATIONS IN PART III

The examinations in part III in 1926, which were entirely clinical and practical, were held in several of sixteen subsidiary centers in different parts of the country (named on page 1416). The results of the examinations were as follows:

Examinations of	Total Examined	Passed	Failed	Percentage Failed
1922	28	28	..	0.0
1923	76	75	1	1.3
1924	120	114	6	5.0
1925	217	206	11	4.1
1926	255	243	12	4.7
Totals	696	666	30	4.3

In 1926, 255 candidates were examined in part III, as compared with 217 in 1925, 120 in 1924, 76 in 1923, and 28 in 1922. During the five years, therefore, 696 candidates were given the final practical examination and, of these, thirty, or 4.3 per cent, failed.

Total Individuals Examined During Five Years

Year	Parts I, II and III, Excluding Duplications				
	Examined	Passed	Incomplete	Failed	Percentage Failed
1922	525	381	58	86	16.4
1923	775	594	79	102	13.4
1924	978	756	69	153	15.6
1925	1,167	915	50	202	17.3
1926	1,161	930	105	126	10.9
Totals	4,606	3,576	361	669	14.5

Omitting duplicates, there were 1,161 individuals who took the National Board's examinations during 1926, as compared with 1,167 in 1925, 978 in 1924, 775 in 1923, and 525 in 1922. The percentage of failures was 10.9. For the five years, altogether 4,606 individual examinations were held and of these 669, or 14.5 per cent, were failures.

IN GENERAL

Of the failures, it is noted that during the last five years 18.3 per cent of the candidates failed in part I, 11.5 per cent of the candidates failed in part II, and 4.3 per cent of the candidates failed in part III. Altogether 4,606 candidates participated in the National Board's examinations during the five years since Jan. 1, 1922, and of these, 669, or 14.5 per cent, failed.

Of those who took examinations in parts I and II during the five years, 361 are listed as incomplete. These are candidates who took examinations in all but one of the subjects included in parts I and II and are listed as incomplete until they have taken an examination also in the remaining subject. In the statistics, however, although mentioned separately, they are counted as successes and not failures.

Recognition of the National Board's Certificates

Holders of certificates from the National Board of Medical Examiners are registered without further examination in thirty-five states, the Canal Zone, Porto Rico and Hawaii as follows:

Alabama	Iowa	New Hampshire	South Carolina
Arizona	Kentucky	New Jersey	South Dakota
Canal Zone	Maine	New York	Tennessee
Colorado	Maryland	North Carolina	Utah
Connecticut	Massachusetts	North Dakota	Vermont
Delaware	Minnesota	Ohio	Virgina
Georgia	Mississippi	Oklahoma	Washington
Idaho	Missouri	Pennsylvania	Wyoming
Illinois	Nebraska	Porto Rico	
Hawaii	Nevada	Rhode Island	

Diplomates licensed without further examination in the United States increased from 2 in 1917 to 112 in 1926, altogether 328 having been so licensed since the National Board was created.

Hospital Internship

The hospital intern year has been adopted as an essential qualification for the license to practice in twelve states, becoming effective in different years, as follows:

State Board of	Affects Student Matriculants	Affects All Applicants
Pennsylvania	1909-10	1914
New Jersey	1911-12	1916
Alaska	1912-13	1917
Rhode Island	1912-13	1917
North Dakota	1913-14	1918
Washington	1914-15	1919
Illinois	1918-19	1923
Michigan	1917-18	1922
Iowa	1919-20	1924
Delaware	1919-20	1924
South Dakota	1920-21	1925
Utah	1921-22	1926

The requirements both by medical schools and by state boards are overwhelmingly if not unanimously for the rotation service in general hospitals.

States Requiring U. S. Citizenship

The following states now require full citizenship as an essential qualification for a license to practice medicine:

Arizona	Illinois	Kentucky	Tennessee
Arkansas	Indiana*	Mississippi	Wyoming
Florida	Kansas	South Dakota	

These states require that first naturalization papers have been taken out:

Alabama	Maryland	North Dakota	Virgina*
Delaware	Michigan	Oregon*	
Louisiana	New Hampshire	Texas	

In the following states the applicant must have declared his intention of becoming a citizen:

Idaho	Nebraska	New York	Ohio
Minnesota	New Jersey		

Michigan requires in some instances that foreign applicants must have successfully completed at least one year's work in a medical school in this country, while Pennsylvania requires one year's internship in a hospital in the United States.

Recognition of Government Examination

Examinations worthy of recognition in all states are those given to medical officers of the United States Army, Navy and Public Health Service. Even now, retired officers of these services are licensed without further examination in

Alabama	Illinois	Texas[1]
Arizona	North Carolina	Utah
California	Pennsylvania	Virginia
Colorado	Porto Rico	Wisconsin

* By Board Ruling.
1. Army and Navy only.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, APRIL 30, 1927

STATISTICS OF STATE BOARD EXAMINATIONS

THE JOURNAL publishes this week, for the twenty-fourth consecutive year, statistics based on examinations held by the various state medical licensing boards during the last calendar year. That the statistics are complete and therefore reliable is due to the cordial cooperation received from the secretaries of the licensing boards, to whom sincere appreciation is tendered.

VERIFICATION OF DATA

The report of each examination received during the year was carefully checked with the files of official data received from the medical schools. In this way any errors in regard to the candidate, his medical school or the year of graduation were promptly corrected. By such checking, also, attention is promptly called to the occasional applicant who holds credentials from a diploma mill or who for any other reason is deemed unworthy of consideration. It is this ability to expose instances of fraud that makes these statistics of particular value to the public. The safeguards in licensure are becoming so well established in this country that unworthy colleges are finding it increasingly difficult to traffic in medical diplomas. Through foreign correspondents, also, attention is often called to such diplomas as are sent abroad.

STATE HOUSECLEANINGS IN LICENSURE

For several years, notoriously wide-open doors into licensure for graduates of low type or fraudulent medical schools were maintained in Arkansas, Connecticut and Florida—states which, in addition to regular medical boards, had separate boards of eclectic medical examiners. The latter were supposedly limited to the examining of graduates of eclectic medical schools, of which only two were still in existence. While that limitation was observed in Connecticut, only from one to three of such graduates were licensed each year. In 1921 and 1922, however, the numbers suddenly jumped to sixty-six and seventy-four, showing that the eclectic board was exceeding its limitation. Statistics showing this increase in the numbers licensed were published in April, 1923. In June, 1923, the commissioner of health of Connecticut refused to issue licenses to twenty-three candidates who were certified by the eclectic board. In October, 1923, came the exposure of the Missouri diploma-mill ring. Within the next few months, about 167 licenses were refused or revoked in Connecticut on the ground of illegality, and not one low grade graduate has since been licensed in that state. Connecticut, therefore, has permanently closed the door against the licensing of incompetent practitioners.

ACTIVITY IN FLORIDA

In Florida the three separate licensing boards were discontinued in 1921, when a new practice law was enacted creating a single composite board of medical examiners. The secretary of the eclectic board, however, refused to surrender his records but continued to issue licenses which, by being dated prior to 1921, had the appearance of legality. Diplomas from a nonexisting medical school were also being sold and bogus physicians in increasing numbers were appearing in that state. The situation was difficult because records were not available by which the frauds could be exposed. The activities of the secretary of the new board, however, with the assistance of the inspectors of the postal and narcotic divisions of the United States government, resulted in the conviction of the former eclectic board secretary, who was fined $1,000 and sentenced to five years in prison. This vigorous action gives promise that Florida hereafter will have an efficient system of medical licensure.

WHAT ABOUT ARKANSAS?

Arkansas, therefore, remains as the only state in which the board of eclectic examiners is still liberally granting licenses to graduates of low grade medical colleges. During 1926, this board licensed eight such graduates, including one from a regular medical college, the St. Louis College of Physicians and Surgeons, and four from the nominally eclectic Kansas City College of Medicine and Surgery, regardless of the fact that the latter was proved in court to be a diploma mill and its charter was revoked for that reason.

Low grade medical schools or diploma mills operating in Missouri can exist only because this wide-open door for licensure is so near at hand in Arkansas, as the "graduates" of such schools are refused recognition in Missouri. Thus far, the investigation of the Missouri diploma-mill ring has resulted only in the revocation of the charter of the Kansas City College of Medicine and Surgery—an action of little effect, since, as anticipated, another nominally "eclectic" institution was promptly chartered and began business on the same site, if not also by the same group, as its predecessor. The St. Louis College of Physicians and Surgeons, the other Missouri college which was

exposed as a diploma mill, has also obtained a new charter, evidently to have in readiness in case its other charter is revoked. Is this college intending also to adopt the "eclectic" faith and thus provide an easy licensure for its graduates in Arkansas? In this connection, it is significant to note that the Middlesex College of Medicine and Surgery, of Boston, in a recent announcement, has clearly stated that it teaches eclectic medicine. Such ridiculous makeshifts will cease to be effective only when Arkansas ceases to license such doctors.

A NEW SOURCE OF INCOMPETENT HEALERS

Now comes a menace from outside the medical profession. Years ago, osteopaths claimed that as they did not use drugs or perform surgical operations they were "not physicians" and were "not practicing medicine," and therefore were not subject to the laws and higher qualifications required of physicians. They have now radically reversed their position and are demanding equal privileges with physicians, but apparently are still unable or unwilling to meet the higher standards of educational and professional training. As a result of such claims, osteopaths are now being licensed as physicians by the medical boards of Colorado, Massachusetts and Texas. This was true also in California until three years ago when, fretting under the restrictions of the medical board, the osteopaths secured an amendment to the California medical practice act, creating a separate board of osteopaths to license them as physicians under a less rigid routine than that applying to graduates of medical schools. While the amendment gives the osteopaths equal privileges with physicians, it does not guarantee equally expert knowledge or training. To make them equal in both respects does not require separate boards or varying standards of qualifications. As a matter of fact, no osteopathic college has entrance requirements equal to those of medical schools, no osteopathic college has equally expert teachers, and no osteopathic college provides equally efficient instruction in the differential diagnosis of diseases or in the many valuable methods of treating sick and injured people. Nevertheless, last year, eighty-eight osteopaths were licensed in the four states named and given the same privileges as physicians.

ACTUAL PROGRESS IN LICENSURE

Regardless of the influences which are threatening to destroy the reasonably high educational standards which now apply to medical education and to the practice of medicine, the statistics this year show that actual progress in medical licensure is being made. There is a gradual increase in the number of physicians licensed each year, thus removing anxiety regarding any shortage of physicians. An increasing proportion of physicians licensed are graduates of well equipped, class A medical schools, and a larger proportion of the medical schools each year are being found worthy of recognition by all boards. Larger numbers of medical graduates each year are taking the examinations given by the National Board of Medical Examiners, which is providing an additional proof of well qualified practitioners and a nation-wide eligibility for medical licensure. Medical practice laws are being constantly strengthened whereby better safeguards are established against the licensing of incompetent physicians. There has come to be a greater degree of uniformity not only in the educational standards upheld by licensing boards but also in the methods followed in the enforcement of those standards. More vigorous efforts have been made to prosecute illegal practitioners; convictions have been more generally secured and the boards are being more generally upheld when cases are carried to the higher courts.

POWER OF PUBLICITY

Through such statistics as are published this week, a better understanding is possible regarding the problems in medical licensure and the measures by which they can be solved. In the United States, perhaps, more than in any other country, the final solution of problems related to the practice of medicine depends on the education of the public. When there is a general knowledge regarding the dangers from illegal and incompetent practitioners, public opinion can usually be depended on to favor better laws and the appointment of competent boards to enforce them.

RED BLOOD CELL DIAMETER

Ever since the beginning of the development of microscopic technic, the red blood cells have been the subject of repeated observations. The accurate determination of the number of erythrocytes circulating in a unit volume of blood has become a familiar routine procedure in the clinic as well as an experimental device employed by the scientific investigator. Thus an enormous literature on the "blood count" has arisen and become an important part of medical information. Two generations ago, considerable attention was devoted by medical microscopists to the determination of the size of the erythrocytes as indicated by their largest diameter. In view of the differences indicated by the red corpuscles of different species, it was hoped at one period to secure identification of blood samples of unknown origin through the application of micrometry. Attempts were even made to ascertain the possibility of the identification of different races of mankind by such a procedure.[1] It was found, however, that the range of variation in corpuscular size was sufficiently large in any species to preclude the safe application of micrometric data for purposes of medicolegal identifications. For human red cells, the

1. Richardson, J. G.: On the Identity of the Red Blood Corpuscles in Different Races of Mankind, Am. J. M. Sc. 73: 112, 1877.

average diameter in normal blood ranges from 3.01 to 14.9 microns, with the major part of the observations for both wet and dry preparations lying between 7.5 and 8 microns. Consequently, interest in such measurements lagged.

Lately, the investigation of red cell diameter has been renewed with reference to the possible importance of the procedure as a means of throwing light on certain obscure problems in hematology, and particularly of differentiating clinical types of anemia.[2] The most recent studies[3] at the Massachusetts General Hospital support the growing evidence of measurable differences between the conditions in pernicious and other anemias. Thus for healthy persons, in round numbers, the normal range of erythrocyte diameter for the median is between 7.4 and 8 microns, and for the dispersion from 1 to 1.2 microns. The average for the median in twenty-five cases of pernicious anemia was 8.6 microns, with a maximum of 10 microns (16 per cent above the average), and a minimum of 8 microns (7 per cent below the average). The average dispersion was 2.3 microns, with a maximum of 3.6 microns (plus 57 per cent) and a minimum of 1.4 (minus 39 per cent). The range of variation in cell diameter is likewise of some interest. In the normal cases, the smallest cell observed was 5.3 microns, the largest 9.9 microns. The largest red cell found in pernicious anemia was 13.9 microns; the smallest, 4 microns.

Ordinary secondary anemias do not show the extremes reported for the pernicious type. As the Boston clinicians point out, the question why in pernicious anemia there should always be a high mean or median diameter, and in secondary anemia usually a normal or low one, is of great interest. Some observers[4] have suggested that from the histologic point of view it would be best to divide all anemias into megalocytic and nonmegalocytic rather than into primary and secondary. In the megalocytic group they would include the anemias of sprue and *Dibothriocephalus latus* infestation. The greater variation in the size of the red cells in the blood of pernicious anemia doubtless results from the simultaneous presence of corpuscles of varied sizes, including some normal cells along with larger and smaller types. The changes in the diameters of cells may be due to alterations in the physicochemical conditions of their environment, notably changes in reaction; but this can scarcely be regarded as an entirely adequate explanation at present. The main consideration is the suggestion that micrometry may play a part of diagnostic significance in distinguishing between pernicious and other types of anemia.

2. Price-Jones, C.: The Variation in the Sizes of Red Blood Cells, Brit. M. J. **2**: 1418, 1910; The Diameter of Red Cells in Pernicious Anemia and in Anemia Following Hemorrhage, J. Path. & Bact. **25**: 487 (Oct.) 1922. Hurst, A. F.: Addison's (Pernicious) Anemia and Subacute Degeneration of the Spinal Cord, Brit. M. J. **1**: 93 (Jan. 19) 1924. Hampson, A. C., and Shackle, J. W.: Megalocytic and Nonmegalocytic Anemias, Guy's Hosp. Rep. **74**: 193 (April) 1924. Ohno, M., and Gievius, O.: Schwankungsbreite und Schwankungsart der Durchmesser menschlicher Erythrocyten, Arch. f. d. ges. Physiol. **210**: 315. Wiechmann, E., and Schürmeyer, A.: Untersuchungen über den Durchmesser der roten Blutkörperchen, Deutsches Arch. f. klin. Med. **146**: 362 (March) 1925.

3. Bell, J. R.; Thomas, F. K., and Means, J. H.: Studies on Red Cell Diameter: I. In Health and in Pernicious Anemia, J. Clin. Investigation **3**: 229 (Dec. 20) 1926.

4. Hampson, A. C., and Shackle, J. W.: Megalocytic and Nonmegalocytic Anemias, Guy's Hosp. Rep. **74**: 193 (April) 1924.

WHAT IS AN ANTISEPTIC?

In current medical textbooks a germicide is defined as a substance or agent that destroys micro-organisms so that they will not grow when placed in appropriate culture mediums; an antiseptic is defined as a substance that hinders or prevents the growth of micro-organisms but does not necessarily destroy their vitality. While these definitions of "germicide" and "antiseptic" have been generally recognized, the terms have been used in medical writings in a slipshod manner, and all too often as if they were synonymous. Not only that; the methods for determining germicidal power have often been applied in such a way as to mistake an antiseptic action for germicidal effect. Thus, in 1910 the Council on Pharmacy and Chemistry was obliged to carry out an extensive research before it was able to convince the proprietor of a then widely advertised antiseptic that the product was an efficient antiseptic but a relatively poor germicide. In its report the Council said: "It seems of the greatest importance that antiseptic power be not mistaken for germicidal power and that physicians should be correctly informed as to these properties of disinfectants recommended to them, so that they may decide for themselves in every given case which action they wish to produce."

While physicians understand that a germicide may produce effects on an infected area in a brief period which can be produced by an antiseptic only through prolonged contact, the general public understands these terms as synonymous. In consideration of this condition, the U. S. Bureau of Chemistry, which is charged with the enforcement of the Food and Drugs Act, has recently come to the conclusion that the term "antiseptic" when used in the labeling of a medicinal product is objectionable unless the preparation when used as directed will actually destroy micro-organisms. In considering the wording of a drug label, the bureau holds in consonance with court decisions that the language used is to be given the meaning ordinarily conveyed by it to those to whom it is addressed. Since an antiseptic remedy means to the public one that acts against sepsis—that is, prevents the condition as much as possible—the bureau holds that the purchaser of such a preparation should therefore be given full benefit of this meaning of the term. If this is not done, a false sense of security is produced and possibly valuable time wasted in using a product that does not have positive germicidal effect. This is especially true of such products as mouth washes, sprays, gargles and douches, which are widely advertised to the public. These preparations are necessarily in but brief contact when administered and are subject to immediate dilu-

tion in situ. If, therefore, the effect produced involves only inhibition, their action on micro-organisms must be inconsequential.

The medical profession will, of course, agree at once that the position taken by the Bureau of Chemistry is in the public interest. That the drug manufacturers are accepting the action of the bureau without much protest is shown by the editorial comments that have appeared in representative trade journals. In former years, "patent medicine" interests would have protested strongly against the bureau's ruling and opposed its adoption. The change is gratifying evidence of the higher plane on which manufacturers of pharmaceuticals conduct their business.

Current Comment

IS MEDICAL EDUCATION OVERSTANDARDIZED?

Among numerous criticisms of medical education in recent years is the claim that it is overstandardized. Twenty-five years ago less than thirty of the 162 medical schools then existing required even a high school education for admission, and only two had any requirement of college work. At that time also less than a third of the institutions had a course of instruction worthy of being called a curriculum. The present situation, in brief, represents a change from a complete absence of entrance requirements in the majority of medical schools to a minimum of two years of college work, and from no curriculum to what, under the circumstances, must be, to say the least, an improvement. The greatest difficulty in this rapid development arose through the inadequate supply of properly qualified teachers to meet the greatly increased demand, particularly for the laboratory sciences. Through the scarcity of physicians who were also qualified teachers, the schools were forced to accept doctors of philosophy, or even masters or bachelors of arts or science with qualifications as nearly approaching the requirement as possible. Under such a handicap, the present high stage of development of instruction in our medical schools is remarkable. But the faults in medical instruction were not restricted to the laboratory departments: many deficiencies have existed in the teaching of the clinical subjects. Not until after the advances in entrance requirements and in instruction in the laboratory sciences did the quality of instruction in the clinical departments undergo an increasingly rapid development. Only during the last decade in many of the medical schools were patients in dispensaries and hospitals more generally and systematically of aid for teaching purposes, and only recently have students been given the opportunity in small sections and as clinical clerks to write histories, make physical examinations, suggest treatment and note the clinical progress of diseases. A minority of our medical schools, it is true, have always been fairly well organized and equipped and have rapidly advanced. In the majority, however, the change of instruction has been from an inferior type to what now is at least a logical sequence of subjects and a fairly well arranged routine of instruction. Perhaps it is complimentary to state that the course of instruction has reached a stage at which a criticism of "overstandardization" can be made. The requirement of only two years of college work for admission, the present four-year medical curriculum and a year of intern training cannot be termed extravagant, as they represent the minimum standard of a physician's education in all the leading countries of the world. The faults of underdevelopment will probably be corrected in time.

DIPHTHERIA IN THE LARGE CITIES OF THE UNITED STATES

THE JOURNAL'S fourth annual summary of diphtheria mortality in the cities of the United States with more than 100,000 population appears elsewhere in this issue. The cities now number seventy-eight and contain a population in excess of 31,000,000. The total diphtheria deaths in this large population were approximately 3,000, or more than three times the typhoid mortality in the same cities. A substantial fall in the urban diphtheria death rate has occurred since 1923 (from 13.12 to 9.48), but the absolute and relative drop in 1926 was less than in the preceding years. The seems to be chiefly because diphtheria of a virulent type has prevailed in a number of cities, so that, although many communities—including such cities as Boston, Chicago and New York—have shown a notable decline, the rate in others has increased to such a degree that the total rate shows little improvement. A severe epidemic occurred in Detroit, increasing the rate in that city to a point not reached for years. While it is probable that the measures of prevention early undertaken and energetically carried out kept the mortality rate from rising as high as it might otherwise have done, the rate actually reached such a point (34.8) as to stimulate speculation as to what would have happened if antitoxin treatment and toxin-antitoxin immunization had not been available. Evidently the diphtheria problem is still a major one for health officials. The distinct epidemic prevalence of a virulent type of the disease in a number of cities in 1926 would seem to afford reason not only for renewed efforts in toxin-antitoxin immunization but also for searching bacterial and epidemiologic investigation.

NEW DESIGNATIONS FOR BLOOD GROUPS ACCORDING TO ISO-AGGLUTININS

A joint committee, appointed a few years ago from the American Association of Immunologists, the Society of American Bacteriologists and the American Association of Pathologists and Bacteriologists, to eliminate, if possible, accidents in the selection of donors for transfusion, due to the existence of two numberings of the blood groups (Jansky and Moss), selected the Jansky numbering, on the basis of its priority. Its recommendation was published in THE JOURNAL[1] and some institutions changed from the Moss to the Jansky numbering, although many continued to use the Moss numbering. As a member of

1. Isohemagglutination: Recommendation That the Jansky Classification be Adopted for General Use, J. A. M. A. **76**: 130 (Jan. 8) 1921.

a committee of the National Research Council on the matter of blood grouping, Dr. Karl Landsteiner has suggested the substitution of the well known letters O, A, B and AB for the Jansky numbers I, II, III and IV and the Moss numbers IV, II, III and I. The letters will be as easily usable as the numbers, and will, at the same time, express the actual constitution of the blood corpuscles with respect to iso-agglutination, as far as it concerns the separation of the groups. Dr. Landsteiner's suggestion has already been adopted by a large German medical society; it is recommended by two recent reviewers of the subject (Hirszfeld and Doan), and has the unanimous approval of the Joint Committee on Blood Grouping of the Division of Anthropology and Psychology and of the Division of Medical Sciences of the National Research Council. The American Association of Immunologists at its meeting in Rochester, N. Y., recently also urged that the suggestion of Dr. Karl Landsteiner be recommended for general adoption in this country.

Association News

THE WASHINGTON SESSION

Veterans' Bureau Exhibit

In Room 1007, Arlington Building, is an exhibit of some of the medical activities of the Veterans' Bureau. This room contains much of the material that formed part of the exhibit by the Veterans' Bureau at the Sesquicentennial held at Philadelphia. Particular stress is laid on demonstrations of occupational therapy.

Taxicab and Motor Tours

Taxicab and motor tour rates to be in effect during the annual session are given below.

WASHINGTON COACH COMPANY

Fourteenth and C Streets, N.W.

Tours and rates are as follows:

	Per Coach
Trip to Mount Vernon (not including fees)	$25.00
Per capita, including fees, $1.75	
Trip to Walter Reed Hospital	10.00
Per capita, 50c.	
Sight seeing trip to end at Arlington in time to see Lee mansion, cemetery and amphitheater, then drill. Pennsylvania Avenue, Capitol, Union Station, E Street, Thirteenth Street, H Street, Vermont Avenue, Thomas Circle, Massachusetts Avenue, Sixteenth Street, Harvard Street, Zoological Park, Connecticut Avenue, Million Dollar Bridge, pass home of Mr. John Hays Hammond, William Howard Taft, late Woodrow Wilson, and others, over Buffalo (Q Street) Bridge through Georgetown, over Key Bridge. Return after drill via Highway Bridge, including lecturer	35.00
Per capita, $2.00	
Trip Hotel to Arlington and return without lecturer	15.00
Per capita, $0.75	
Trip for city sight seeing, with lecturer	15.00
Per capita, $0.75	
Arlington Trip—Sight seeing with lecturer	20.00
Per capita, $1.10	

Any other trips desired can be arranged.

ROYAL BLUE LINE MOTOR TOURS

Raleigh Hotel, Pennsylvania Avenue and Twelfth Street.

Tickets will be sold and bookings made for tours at the regular rates, which are as follows:

Seeing Washington, including stop at Lincoln Memorial	$ 1.00
Seeing public buildings	1.50
Seeing Arlington	1.50
Seeing Mount Vernon, including guide fees	3.00
Seeing Episcopal cathedral	1.50
Seeing Franciscan monastery	1.50
Seeing Annapolis	5.00
Seeing Gettysburg	10.00
Seeing Fredericksburg	10.00

Any organized group of ten or more persons will be entitled to reduced party rates, as follows:

Seeing Washington	$0.75
Seeing public buildings	1.25
Seeing Arlington	1.25
Seeing Mount Vernon, including guide and admission fees	2.75
Seeing Franciscan monastery	1.00
Seeing Episcopal cathedral	1.00
Seeing Gettysburg	7.50
Seeing Fredericksburg	7.50
Seeing Annapolis:	
Based on minimum of ten persons	4.00
Based on minimum of twenty persons	2.25

YELLOW CAB COMPANY

1231 Twentieth Street, N.W.

Taxicab flat rates from the Auditorium or any of the downtown hotels to the various golf clubs mentioned are given below:

Beaver Dam Golf Club, one way	$5.00
Congressional Country Club, one way	4.00
Burning Tree Golf Club	4.00
Argyle Golf Club, one way	4.00
Manor Golf Club, one way	4.00
Bannockburn Golf Club, one way	3.00
Town and Country Club, one way	3.00
Indian Springs Golf Club, one way	3.00
Columbia Country Club, one way	2.50
Washington Country Club, one way	2.50
Chevy Chase Club, one way	2.00

Users of this service can file orders for a return trip either by phone or with the driver, stating the time at which the cab is desired for the return trip.

"Drive yourself" cars for trips of this kind can be furnished at the following rates, which will include gasoline and oil:

Six cylinder sedans	20c per mile
Six cylinder touring cars	17c per mile
Ford sedans	15c per mile
Ford touring cars	12c per mile

An additional charge of 50 cents will be made each twenty-four hours to cover $5,000 to $10,000 liability insurance, and $1,000 property damage.

Yellow Cab service will be maintained at the Auditorium at all times during meetings of the annual session, in charge of agents and starters. Taximeter rates for the distances indicated, in either direction, are as follows:

Arlington Hotel	to Auditorium, 55c
Annapolis Totel	to Auditorium, 55c
Burlington Hotel	to Auditorium, 55c
Capitol Park Hotel	to Auditorium, 75c
Continental Hotel	to Auditorium, 75c
Congress Hall	to Auditorium, 75c
Carlton Hotel	to Auditorium, 45c
Cairo Hotel	to Auditorium, 55c
Howard House	to Auditorium, 55c
Hamilton Hotel	to Auditorium, 55c
Lafayette Hotel	to Auditorium, 35c
Lee House	to Auditorium, 45c
Mayflower Hotel	to Auditorium, 45c
Metropolitan Hotel	to Auditorium, 45c
National Hotel	to Auditorium, 55c
Powhatan Hotel	to Auditorium, 35c
Raleigh Hotel	to Auditorium, 45c
Roosevelt Hotel	to Auditorium, 75c
St. James Hotel	to Auditorium, 55c
Willard Hotel	to Auditorium, 45c
Washington Hotel	to Auditorium, 35c
Wardman Park Hotel	to Auditorium, 85c

On account of traffic obstructions, the foregoing taximeter rates may register 10 cents more. These rates, however, are the normal rates between these points.

Walter Reed Hospital (flat rate) one way	$2.00
Mount Vernon and return (stopping at tomb of unknown soldier at Arlington) (flat rate) one way	8.00
Arlington and return (hourly rate), per hour	2.50

The rates quoted are per taxicab, which includes from one to five passengers. There are available, also, latest model limousines at $3 an hour, or taxicabs at $2.50 an hour.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

"Eye Specialists" Jailed at Huntsville.—"Dr." Burns and N. Harris were being held in jail at Huntsville, March 31, awaiting action of the grand jury, following an alleged robbery of a patient at New Hope to whom they were supposedly administering treatment. The "doctors," it is reported, took $900 from the pocket of their patient. They are believed to be the same pair that posed as eye specialists in Minnesota in September, 1924; if so, they are wanted at New Vim, Minn., for skipping bail. In the New Hope escapade they gave their home as Dallas, Texas, but investigation revealed that they are not known in that city. THE JOURNAL during 1926 published items concerning "eye specialists" operating in Kentucky, Virginia, Mississippi and Ontario, Canada, and in one of those items the name "Dr. Harris" appears.

CALIFORNIA

University News.—Stanford University has dropped its proposed $1,000,000 Luther Burbank Foundation Fund to perpetuate the experimental work at Santa Rosa and Sebastopol (THE JOURNAL, Sept. 19, 1925, p. 907).

Personal.—Dr. Aaron S. Torrens, Hanford, has been appointed health officer of Kings County to succeed Dr. Elmer C. Bond.——Dr. John L. McDaniels, Mariposa, has resigned as health officer of Mariposa County on account of poor health, and Dr. Amzi M. Gregory was appointed to fill the unexpired term.——Dr. Claire Rasor has been elected chairman of the staff of Fabiola Hospital, Oakland.——Dr. Sam G. Kreinman, for two years resident physician at the California Lutheran Hospital, Los Angeles, has resigned, and will be succeeded by Dr. Austin O. Sanden.

Expedition to Collect Pituitary Glands of Whales.—Under the direction of Prof. Max S. Dunn, Ph.D., assistant professor of biochemistry of the University of California, the whaling ship *Lansing* has been cruising off the coast of southern California and Mexico in search of whales from which the pituitary and some other glands are being preserved for study in laboratories of the university. Professor Dunn's chief interest in the subject is the determination of the composition of pure proteins and, as a secondary phase of the study, to assist in their synthetic preparation.

New Editors.—Since the death of Dr. William Everett Musgrave, editor of *California and Western Medicine*, the council of the California Medical Association has decided that Drs. George H. Kress, Los Angeles, and Emma W. Pope, San Francisco, should be placed in charge as editors of the state journal. There was also appointed an editorial committee with the power of general supervision, consisting of the president, the president-elect, the chairman of the council and the two editors. The general editorial policy of the journal will remain along the lines laid down by its late editor.

COLORADO

Governor Vetoes Sterilization Bill.—Governor Adams vetoed a bill, April 11, which would have authorized the sterilization of feebleminded epileptic and insane inmates of institutions under the supervision of the state medical board.

FLORIDA

Personal.—Dr. Howard C. Von Dahm has assumed the duties of medical officer-in-charge of the U. S. Veterans' Bureau Hospital at Lake City.

Bills Introduced.—Senate bill 75 would require the annual registration of all physicians, surgeons, osteopaths, chiropractors, naturopaths, midwives and all others practicing the healing art.——Representative Lee Stalnaker introduced a bill in the Florida legislature, April 11, which would prohibit the teaching in any school of the state the theory that man either ascended or descended from a lower order of animals.

ILLINOIS

Bill Introduced.—House bill 424 would grant the inmates of state institutions the right to choose individual systems or methods of treatment.

Personal.—Dr. Leon H. Tombaugh, Waukegan, was guest of honor at a recent meeting of the Lake County Medical Society in celebration of his fiftieth year in the practice of medicine.——Dr. William R. Fletcher has been appointed postmaster of Joliet.

Society News.—Dr. Walter Baumgarten, St. Louis, addressed the Rock Island and Scott County Medical societies, April 11, on "Heart Conditions in Pregnancy."——Dr. Clarence L. Wheaton, Chicago, addressed the Rock Island County Medical Society at Moline, April 12, on "Lobar Pneumonia."

Chicago

Hospital News.—The Hospital Association of Illinois will hold its annual convention at the Hotel Sherman, May 5-6, under the presidency of Dr. Paul W. Wipperman, Decatur; there will be a symposium on hospital finance, another on hospital legislation, and another on nursing problems. Persons from Illinois and other states are invited to take part.

Society Moves to Medical and Dental Arts Building.—After May 1 the office of the Chicago Medical Society will be in Suite 514-518 in the new twenty-three story Medical and Dental Arts Building, 185 North Wabash Avenue, at the corner of Wabash Avenue and Lake Street. The telephone number of the society will remain the same—Central 3026. This building will be entirely completed by May 15.

Society News.—The Medical Section of the American Life Convention will hold its seventeenth annual meeting at the Drake Hotel, May 4-6, under the chairmanship of Dr. Carl Stutsman, Des Moines, Iowa. Dr. Herbert M. Woollen, Indianapolis, president, American Life Insurance Company and of the American Life Convention, will give an address, and the medical directors of various life insurance companies will speak.

Children's Hospital at University of Chicago.—President Mason announced, April 20, that Colonel and Mrs. Roberts had given $1,000,000 through the medium of the Bobs Roberts Memorial Hospital for Children for charitable purposes, and that the children's hospital will be an addition to the University of Chicago clinics. About half of this sum will be used to build and equip the 100 bed hospital on a site at Fifty-Ninth Street and Drexel Avenue; the remainder will be used for endowment. The new hospital will be a memorial to the son of the donors who died in 1917, aged 5½ years. This, with the Chicago Lying-in Hospital, whose affiliation was recently announced, will give the University of Chicago exceptional facilities for the care of children and for research in children's diseases. The Bobs Roberts Memorial Hospital will adjoin the Chicago Lying-in Hospital, and will be intimately associated with the care of children born there; both will have free access to the facilities of the other university clinics. Construction is expected to start before the end of this year. Colonel Roberts is president of Miller and Hart, packers, located in the Union Stockyards.

KENTUCKY

Salary Reduced.—At the April term of the Nicholas fiscal court, when all the magistrates were present, the Carlisle *Mercury* notes that the salary of the county health officer was reduced from $400 to $200 per year. Dr. Oliver S. Kash, who held the position for years, declined reelection. The selection of a new health officer was postponed until the next meeting.

New Health Unit.—A new whole-time health unit at Henderson will be established, May 1, it is reported. There will be two public health nurses, a sanitary inspector, a technician and a whole-time health officer, who had not been chosen at the time the Henderson *Gleaner* made this announcement. Under the new plan, the present county health officer and the city health officer's positions will be abolished. The state will provide $2,500; the city, $2,500; the county, $2,500, and the International Health Board of the Rockefeller Foundation, $2,500 to carry on this work.

Society News.—The Woman's Auxiliary of the Kentucky State Medical Association has determined to devote a large part of its time to the study of the medical history of Ken-

tucky.——The Cumberland Valley Medical Society is a new organization composed of members of the county societies of Harlan, Bell, Knox, Laurel and Whitley. The president is Dr. William M. Martin, Harlan, councilor of the Eleventh District.——At the February 10 meeting of the Hardin County Medical Society, an amendment to the by-laws was offered to be voted on at the March meeting, providing that no physician in the county who had not attended at least two regular meetings of the county medical society should be eligible for membership.

MARYLAND

Christian Science Bill Killed.—House bill 78, designed to permit Christian Science practitioners to charge and collect fees, our correspondent writes, died on the files of the house, March 30.

Louis Werner Fined.—Louis Werner pleaded guilty to four charges of practicing medicine without a license, April 8, and was fined $175 and costs in the criminal court of Baltimore. Our correspondent notes, however, that Werner proved by copies of diplomas from the University of Strasbourg that he was qualified to take a medical examination.

Conference of Health Officers.—Deputy state health officers from all parts of Maryland conferred, April 8, with the chief of the bureau of communicable diseases, Dr. Robert H. Riley, concerning tourists' camps and inspection work around canneries. The state board of health is formulating rules on all kinds of camps in which there are more than five persons, and it will then be necessary to have a permit from the state board before a permanent camp can be established.

State-Wide Milk Survey.—The state department of health is surveying the milk supply and methods of handling milk in dairies over the entire state, under the direction of Dr. Robert H. Riley, of the bureau of communicable diseases. There has been no epidemic of children's diseases which could be traced directly to milk. The death rate among infants however, is too high. Partial surveys are made annually. This survey will include all larger towns in the counties of Maryland.

Public Health Meeting.—Cumberland conducted its third annual public health meeting, March 22, in the state armory. There was a joint meeting of the Rotary, Kiwanis and Monarch clubs at noon; the regular meeting of the Allegany-Garrett County Medical Society in the afternoon, and a public health meeting in the evening. The speakers included Drs. Joseph C. Bloodgood, Dean Lewis, Thomas S. Cullen and James M. H. Rowland of Baltimore. Mayor Koon gave an address of welcome. The municipal band played.

Child Health Day.—The governor has proclaimed May 2 as Child Health Day, and many organizations are cooperating in the plans for a state-wide celebration. There will be exercises in the schools, plays, special music and athletic events in which the children themselves will take part. The program, however, will not be limited to one day but throughout the spring season health conferences for babies and preschool children, especially those who will enter school next fall will be held, also health parades and pageants, displays, movies, radio talks, all to emphasize the importance of giving the best possible care of child health.

Society News.—The Book and Journal Club of the Medical and Chirurgical Faculty of Maryland met in Baltimore, April 7; Dr. Melvin S. Rosenthal spoke on "The Doctor and His Art as Depicted by the Elizabethan Dramatists," and Dr. Edward N. Brush, on "How Moses Sheppard Secured the Medical Education of a Colored Man." Dr. Allen K. Krause read "Notes on Auenbrugger," and Dr. Harry Friedenwald, the president, presided.——Dr. William R. Dunton, Jr., Catonsville, addressed a joint meeting of the Maryland Psychiatric Society and the Baltimore County Medical Association, April 20, at Towson, on "Examination of Mental Patients by the General Practitioner."——Dr. Thomas S. Cullen, Baltimore, president of the Medical and Chirurgical Faculty of Maryland, gave a dinner, April 26, in honor of the former presidents of the state society.——M. A. Barber, U. S. Public Health Service, gave a DeLamar lecture, April 24, at the School of Hygiene and Public Health, Johns Hopkins University, Baltimore, on "Criteria of the Results of Malaria Control Measures."——A portrait of the late Dr. Charles Geraldus Hill and a bust of Dr. George Keidel were presented to the Medical and Chirurgical Faculty of Maryland at the annual meeting, April 27, the former being presented by Dr. William R. Johnson, the latter by Dr. Julius Friedenwald.

MASSACHUSETTS

Hospital News.—The Boston City Hospital, Boston, is to erect an eight story surgical building on the site of the present building, on the northeast corner of the hospital grounds at East Concord Street.

Typhoid from Carriers.—The state health officer, Dr. George H. Bigelow, recently called attention to an outbreak of typhoid at Billerica and Lowell of about thirteen cases, in which the source was a typhoid carrier, to a recent outbreak in Lincoln, Concord and Weston of fifty-one cases, and to another of fifteen cases in Wakefield. The latter was due to a carrier who handled food at a church supper.

MINNESOTA

Veterans' Bureau Hospital at Fort Snelling Dedicated.—Ceremonies were held, April 9, to dedicate the new U. S. Veterans' Bureau Hospital at Fort Snelling. Theodore Christianson, governor of Minnesota; Dr. Benjamin W. Black, medical director of the Veterans' Bureau; Mr. Howard P. Savage, national commander of the American Legion, and representatives of patriotic organizations, gave addresses. The Third Infantry Band, the Minneapolis American Legion Auxiliary Glee Club, and the Drum Corps, St. Paul Post number 8, American Legion, furnished the music. The institution has about 541 beds, of which 260 are for tuberculosis cases, 242 for general, medical and surgical cases and thirty-

nine for neuropsychiatric cases. The buildings are arranged as a horseshoe along Minnehaha Drive through Fort Snelling. The recreation building is in the center, the three buildings for tuberculous cases are one side and the neuropsychiatric, administration, and clinic buildings are on the other. The clinic is fully equipped for the care of hospital and outpatients, having an eye, ear, nose and throat department, special examining rooms, dental clinic, pharmacy, roentgen ray, hydrotherapy, physiotherapy departments, and special rooms for basal metabolism and electrocardiography. There are quarters at the hospital for medical officers on duty, nurses and attendants. The hospital is ideally located to care for men in the vicinity of Minneapolis and St. Paul.

MISSOURI

State Medical Meeting.—The seventieth annual meeting of the Missouri State Medical Association will be at Sedalia, May 3-5, with the Pettis County Medical Society as host. The house of delegates and the council will hold their first session, May 2, at the court house, where the scientific sessions will also be held in the circuit court room. The general meetings, May 3, will be a symposium on railway and emergency surgery in the morning and a symposium on blood transfusion in the afternoon in addition to papers by Drs. Augustin P. Munsch and Charles H. Nielson, St. Louis, Frank I. Ridge, and by J. Henry Caruthers, St. Louis, formerly assistant attorney general. A general meeting, May 4, will comprise addresses by various prominent physicians of Missouri and the night session will be addressed by the president, Dr. William H. Breuer, St. James, by Dr. Jabez N. Jackson, President Elect of the American Medical Association; by Dr. Charles M. Rosser, Dallas, Texas, and by F. C. Waite, Ph.D., Cleveland. A reception and dance will follow this evening meeting. There will be a golf tournament Tuesday afternoon, and a boxing match, Tuesday

evening. Thursday's program comprises eleven papers by physicians of the state. The annual meeting of the medical secretaries will be Tuesday, 6 p. m., at the Liberty Hotel. Dr. Austin McMichael, Rockport, and Drs. Breuer and Waite will speak, and there will be a roundtable on "Influence of the County Medical Society in the Community." The Woman's Auxiliary will hold its third annual meeting at the First Methodist Episcopal Church, May 3-4, under the presidency of Mrs. Arthur B. McGlothlan.

NEW YORK

Hospital News.—The trustees of the Stuyvesant Polyclinic, a dispensary with hospital charters, at 137 Second Avenue, have voted to change the name to the German Polyclinic-Deutsche Poliklinik.——Dr. Harold M. Hays has purchased the property at 112-114 East Eighty-Third Street as a site for a private hospital.——A bronze medal, made in memory of Dr. Samuel H. Rosenthal, has been placed in the Park Avenue Hospital, Rochester.

Society News.—The New York Society for Clinical Psychiatry held its April 21 meeting at the U. S. Veterans' Hospital No. 81, 131 West Kingsbridge Road. Dr. Chester L. Carlisle read a paper on "Paraphrenia"; there were cases presented also.——Dr. Walter Béran Wolfe addressed the Eastern Public Speaking Conference, April 23, at Hunter College, New York, on "Speech and the Speech Arts in the Light of Individual Psychology."

Allowance for Mothers.—Governor Smith has signed a bill empowering child welfare boards to grant allowances by the state to mothers whose husbands are suffering from tuberculosis. The allowance is subject to the provision that the mother is mentally, morally and physically capable to care for the child for whose benefit the allowance is made. She must also meet certain requirements with respect to residence and citizenship. The previous law permitted the granting of an allowance for the support of a family when the father was permanently incapacitated and confined in a hospital for tuberculosis.

State Medical Meeting.—The one hundred and twenty-first annual meeting of the Medical Society of the State of New York will be at Niagara Falls, May 9-12, under the presidency of Dr. George M. Fisher. There will be a "Cancer Day" May 12, with demonstrations in the morning of the pathology, methods of research, frozen sections, clinical cases, roentgen-ray films, and moving pictures on prevention, and in the afternoon, of the diagnosis and treatment of cancer. Among the scientific discussions will be "Treatment of Pernicious Anemia by Diet Rich in Liver" by Drs. George R. Minot and William P. Murphy of Boston; "Acute Osteomyelitis," Dr. Clarence L. Starr, Toronto, Canada; "Placenta Excreta," Dr. Delbert L. Jackson, Boston; "The Heart in Childhood," Dr. Samuel C. Smith, Philadelphia, "Headache," Dr. Robert G. Armour, Toronto, Canada; "Report on 1927 Health Legislation," Dr. Paul B. Brooks, Albany; "Relation of Vitamins to Neurology," Dr. John M. McKinney, New York; "The Capacity of Dermatology," Dr. William Allen Pusey, Chicago, and "Acute Cranial Injuries," Dr. Max M. Peet, Ann Arbor, Mich. The annual banquet will be at the Niagara Hotel, Tuesday evening; Mr. William G. Rose, Cleveland, will be the speaker; tickets, $6. Physicians are urged to bring their wives; arrangements for parties can be made by addressing Dr. Walter Roger Scott, chairman, ball committee, 598 Pine Avenue, Niagara Falls. Physicians desiring to play in the golf tournament should request assignments from Dr. Carl G. Leo-Wolf, chairman, 108 Buffalo Avenue, Niagara Falls. There will be a trip to Fort Niagara, and a reception by the commander of the fort; also golfing, tea and bridge. The falls will be illuminated every evening from 9 to 11:30.

New York City

Seventh Harvey Lecture.—Merkel H. Jacobs, Ph.D., professor of general physiology, University of Pennsylvania School of Medicine, will deliver the seventh Harvey Society Lecture at the New York Academy of Medicine, May 7, on "The Exchange of Materials Between the Erythrocyte and Its Surroundings."

Dr. James' Will.—The will of the late Dr. Walter B. James bequeathes $25,000 to Columbia University to the endowment fund of the College of Physicians and Surgeons; $25,000 to the New York Academy of Medicine, and $25,000 to the Trudeau Sanatorium, Saranac Lake. The estate is valued at about $2,000,000, it is reported, one half of which is willed to the widow and the other half to be divided among three children.

Presbyterian Hospital Site Sold.—The present site of the Presbyterian Hospital, Seventieth and Seventy-First streets was sold, April 8, for a reported sum of about $7,000,000, the purchase including the Presbyterian Hospital Nurses' home. The two parcels of property were purchased from a syndicate which, in January, 1925, bought them from the trustees of the hospital. The site will be improved, the New York *Times* notes, with high class apartments and specialty shops.

Personal.—Dr. Thomas H. Cherry has been appointed professor of gynecology at the New York Post Graduate Medical School and Hospital.——Additions to the faculty of the New York Polyclinic Medical School and Hospital include Drs. Fred W. Bancroft, professor of surgery; Harold E. Santee, professor of surgery; Charlton Wallace, professor of orthopedic surgery; Percy H. Williams, professor of gynecology, and John H. Carroll, professor of internal medicine. ——Dr. Emanuel Libman, formerly of Mount Sinai Hospital, has been appointed a member of the medical faculty of the new university in Jerusalem.——Dr. Frederick P. Gay, professor of bacteriology, Columbia University College of Physicians and Surgeons, has been elected an associate member of the Belgian Society of Biology.

OHIO

Society News.—Dr. Hans Brunner, Vienna, will give a course under the auspices of the Academy of Medicine of Toledo and Lucas County, April 25-May 6, daily, for which the fee is $20.——Dr. Lawrason Brown, Saranac Lake, N. Y., among others, addressed the Academy of Medicine of Cleveland, April 15, on "Early Diagnosis of Tuberculosis."—— Dr. Roy C. Hunter, Wapakoneta, has been elected president of the Auglaize County Medical Society.

A Million for Cleveland's Medical Center.—It was announced, April 9, that Samuel Mather has subscribed $1,000,000 toward the campaign to raise $6,000,000 by the university hospitals of Cleveland for additions to the medical center. Thirteen years ago, Mr. Mather and his associates secured the land for the medical center, and his gifts to its institutions already total millions of dollars. It is expected that the entire fund for the medical center will be completed about May 16 (THE JOURNAL, March 26, p. 1012).

County Society News.—The Tuscarawas County Medical Society met with the dental society, February 10, and was addressed by Dr. Howard M. Brundage, Columbus, on "Foci of Infection."——Dr. Arthur G. Helmick, Columbus, addressed the Athens County Medical Society, February 7, on "Respiratory Disturbances of Childhood."——Dr. Louis Mark, Columbus, addressed the Licking County Medical Society, February 25, Newark, on "Early Diagnosis of Pulmonary Tuberculosis."——Drs. Eugene F. McCampbell and Joseph Price, both of Columbus, addressed the Muskingum County Academy of Medicine, Zanesville, March 1, on "Progress of Medicine During 1926" and "Progress of Surgery During 1926," respectively.——The March 7 meeting of the Columbus Academy of Medicine was a symposium on medical military matters by regular army officers stationed at Fort Hayes.——Dr. John H. J. Upham, Columbus, addressed the Crawford County Medical Society, March 7, on "Periodic Health Examinations."——At the monthly meeting of the Darke County Medical Society in April, Dr. Clarence J. Broeman, Cincinnati, spoke on "Radium as a Therapeutic Agent in Medical and Surgical Conditions," illustrated with lantern slides. Parke, Davis and Company will show a moving picture on "Biologic Products."——The annual dinner of the Ohio Society of Clinical Laboratory Diagnosis will be held, May 12, at the Neil House, Columbus, and May 13, the society will visit the laboratories of various hospitals and clinics.

OKLAHOMA

Personal.—Dr. Lewis E. Emanuel, Chickasha, has been elected president of the Oklahoma Hospital Association.—— Dr. Fred A. Glass has been appointed president of the staff of St. Johns Hospital, Tulsa.

Society News.—The Tri-County Medical Society (Cowley and Sumner, Kansas, and Kay County, Oklahoma) held a meeting at Tonkawa, March 16, at which the speakers were Dr. Edward P. Allen, Oklahoma City, whose subject was "Eclampsia"; Dr. Arthur E. Hertzler, Halstead, Kans., "Goiter"; Dr. Edwin A. Tufts, Arkansas City, Kans., "Potters Version"; Dr. William P. Callahan, Wichita, "Skull Fractures"; Dr. Earl D. McBride, Oklahoma City, "Deformities from Infantile Paralysis," and Dr. Albert R. Hatcher, Wellington, Kans., "Case History Report."

PENNSYLVANIA

Personal.—Dr. Charles H. Minor, until recently state health commissioner, expects to return to Wilkes-Barre after a postgraduate term at the University of Pennsylvania to engage in the practice of internal medicine.——Dr. Jesse O. Arnold, clinical professor of obstetrics in the Temple University School of Medicine, has been promoted to professor of obstetrics, to succeed the late Dr. John C. Applegate.

Westmoreland County's Annual Clinic.—The Westmoreland County Medical Society will hold its sixth annual clinic and banquet, May 6. The clinicians will be Dr. Henry A. Christian, Hersey professor of theory and practice of physic, Medical School of Harvard University, Boston, and Dr. John Stewart Rodman, professor of surgery, Woman's Medical College of Pennsylvania. The clinical session will begin promptly at 2 o'clock at the new armory, Greensburg, and a cordial invitation is extended to all physicians. The banquet will be at the Greensburg Country Club, 6:30, $3 per plate. Reservations should be made by addressing Dr. Dennis Ray Murdock, Greensburg, Pa.

Philadelphia

Society News.—Dr. Leon Solis Cohen, among others, addressed the Northern Medical Association of Philadelphia, April 18, on "Roentgenologists' Diagnosis of Lung Tumors."——The Medical Club of Philadelphia gave a reception at the Bellevue-Stratford Hotel, April 22, in honor of Mr. Homer Folks, secretary, State Charities' Aid Association, New York, and Mr. Charles H. Grakelow, director, department of public welfare, Philadelphia.

Dr. Krusen Heads College of Pharmacy.—Dr. Wilmer Krusen, city health commissioner, has accepted the presidency of the Philadelphia College of Pharmacy, succeeding Rear Admiral William C. Braisted, retired, who recently resigned. Dr. Krusen is a native Pennsylvanian, born in Bucks County in 1869, graduating from Jefferson Medical College in 1893; after teaching for a number of years in his alma mater, he became professor of gynecology at Temple University School of Medicine and is now emeritus professor. He will remain the health commissioner.

Personal.—The senior class will present to Jefferson Medical College, May 26, a portrait of Dr. Hobart Amory Hare, Sutherland M. Prevost professor of therapeutics, materia medica and diagnosis, painted by William Thomson. Portraits by the same artist of Drs. Thomas McCrae, Magee professor of practice of medicine and clinical medicine and Albert Brubaker, professor of physiology and medical jurisprudence, were presented to the college in 1925 and in 1926 by the graduating classes.——Dr. Robert Tait McKenzie is designing the working models of a war memorial to be erected in Edinburgh, Scotland.

Hospital News.—The Memorial Hospital of Roxborough has awarded contracts for the immediate construction of a 100 bed addition, four stories high, with four maternity wards, operating rooms and a roentgen-ray department; the necessary funds, about $300,000, are available.——The Abington Memorial Hospital is conducting a campaign for $1,500,000 for the purpose of enlarging the hospital.——The Hospital Association of Pennsylvania held its sixth annual conference at the Adelphia Hotel, April 19-21; Dr. Henry K. Mohler, medical director of Jefferson Hospital, was installed as president, and Dr. Edgar E. Shifferstine, superintendent, state hospital, Coaldale, president-elect.——The Episcopal Hospital is conducting a campaign for $200,000 for funds for a new building.——At the annual meeting of the Philadelphia Heart Association, April 19, it was announced that arrangements have virtually been made through private beneficence for the erection in Philadelphia for a 200 bed institution where sufferers from heart disease can be cared for and that much of the endowment needed was also in sight.

Pennsylvania Organizes New Department of Pathology.—The provost of the University of Pennsylvania announced, April 18, the organization of a new department of pathology coordinating the teaching and research activities in pathology in the university's school of medicine. Three new professors of pathology and an associate professor were elected by the board of trustees. Heading the department will be Dr. Eugene L. Opie, director of the laboratory of the Henry Phipps Institute and formerly president of the American Association of Pathologists and Bacteriologists. Dr. Edward B. Krumbhaar, who was elected professor of pathology, will have charge of the undergraduate teaching in the department. Dr. Krumbhaar is a former president of the Philadelphia Pathological Society and director of the laboratories of the Philadelphia General Hospital, from which position he will resign. Dr. Herbert Fox, director, William Pepper Laboratories of Clinical Medicine in the University of Pennsylvania Hospital, was elected a professor of comparative pathology and Dr. Baldwin Lucke, assistant professor of pathology in the medical school, was elected an associate professor of pathology. In addition, the following of professorial rank will be on the staff of the new department: Dr. Joseph McFarland, professor of pathology; Dr. Morton McCutcheon, assistant professor of pathology; Dr. Stuart Mudd, assistant professor of experimental pathology, and Dr. Damaso Rivas, assistant professor of parasitology. The plan now operating at the university might be described, the announcement states, as a "pathological center." Dr. Opie will continue his directorship of the pathologic laboratory at the Phipps Institute; Dr. Fox will retain his directorship of the Pepper Laboratory of Clinical Medicine and continue his pathologic studies at the Zoological Gardens.

SOUTH DAKOTA

State Medical Meeting.—The forty-fifth annual meeting of the South Dakota State Medical Association will be at Huron, May 3-5, under the presidency of Dr. Theodore F. Riggs, Pierre. The house of delegates will meet the first day at 8 p. m. The evening meeting, May 4, will be open to the public; Dr. Joseph C. Bloodgood, Baltimore, and Dr. John M. Dodson of Chicago, will speak. The Rush Alumni luncheon will be May 4. A dinner will be given that evening for visiting physicians and their wives. Among others appearing on the scientific program will be Dr. Frederick C. Rodda, associate professor of pediatrics, Univeristy of Minnesota Medical School, who will give a pediatric clinic and discuss "Treatment of Communicable Diseases"; Dr. Joseph C. Ohlmacher, professor of pathology and bacteriology, University of South Dakota College of Medicine, "Evidence of Arrest or Cure in Certain Cases of Diabetes Mellitus"; Dr. Clarence W. Hopkins, Chicago, "Head Injuries"; Dr. David M. Berkman, Mayo Clinic, Rochester, Minn., "Dyspepsia"; Dr. Henry L. Ulrich, associate professor of medicine, University of Minnesota Medical School, who will give a medical clinic; Dr. John S. Coulter, Chicago, "Physiotherapy"; Dr. Albert L. Severeide, Webster, "Diagnosis of Stomach and Intestinal Diseases," and Dr. Frederick C. Warnshuis, Grand Rapids, Mich., speaker, House of Delegates of the American Medical Association.

TENNESSEE

Health at Memphis.—Telegraphic reports to the U. S. Department of Commerce from sixty-eight cities with a total population of about 30 million, for the week ending April 16, indicate that the highest mortality rate (25.3) was for Memphis, and that the mortality rate for the group of cities was 13.6. The mortality rate for Memphis for the corresponding week last year was 20.9, and for the group of cities 15.5.

State Medical Election.—At the last annual meeting of the Tennessee State Medical Association, Chattanooga, April 12-14, Dr. William Battle Malone, Memphis, was elected president, and Dr. Harrison H. Shoulders, Nashville, full-time secretary and editor of the state medical journal. The vice presidents elected were Drs. Robert Lyle Motley, Jr., Dyersburg, for West Tennessee; Dr. William W. Porter, Springfield, for Middle Tennessee, and Dr. George E. Wilson, Rockwood, for East Tennessee; Dr. Charles N. Cowden, Nashville, is speaker of the house. Trustees of the association named were Drs. Robert B. Wood, Knoxville; Charles N. Cowden, Nashville; John L. Jelks, Memphis; John O. Manier, Nashville, and Ernest R. Zemp, Knoxville. The next annual meeting will be held at Nashville.

TEXAS

Society News.—Major Shelley U. Marietta, U. S. Army, addressed the Bexar County Medical Society, San Antonio, February 3, on "Disorders of the Pituitary Gland"; Col. Martin L. Crimmins, U. S. Army, retired, addressed the society, February 10, on "Poisonous Snakes" and Dr. Isaac Dudley Jackson on "Pathology and Treatment of Snake Bites."——Dr. Edwin Ghent Graves addressed the Harris County Medical Society, February 2, on "Early Myocardial Insufficiency." Lieut. Col. Henry H. Rutherford, U. S. Army, addressed the society, recently, in the interests of the medical reserve corps.——The Kaufman County Medical Society was entertained at a luncheon, February 10, at the home of Dr. James W. Park,

the president, in celebration of his fiftieth anniversary in the practice of medicine in Kaufman County.——Dr. Charles M. MacNelly addressed the Parker County Medical Society, February 1, on "Thoracic Diseases with Abdominal Symptoms."——Dr. John Potts addressed the Tarrant County Medical Society, February 1, on incipient tuberculosis, and Dr. Charles F. Clayton on tuberculosis of the spine. Dr. A. E. Jackson, tuberculosis of the eye; Dr. Porter O. Brown, tuberculosis of the skin, and Dr. Robert S. Mallard, tuberculosis of the genito-urinary tract.——Dr. Marion N. York, Texarkana, addressed the Titus County Medical Society, February 8, on "Gallbladder Visualization and Complete Fluoroscopy of the Entire Intestinal Tract."

WASHINGTON

Rural Clinic.—Several physicians of Okanogan County have formed a clinic with headquarters in Omak; they have arranged to keep office hours in other towns in the county on specified days. Okanogan is a large and sparsely settled county.

Society News.—Dr. Russell J. McCurdy addressed the Seattle Obstetrical and Gynecological Society, March 22, on "Sterility."——Dr. Robert S. Dinsmore, Jr., Cleveland, addressed the King County Medical Society, Seattle, May 2, on "The Treatment of Goiter."——The Whitman County Medical Society has elected Dr. David T. Ford, Pullman, president for the ensuing year.

Personal.—Dr. William A. Glasgow, Seattle, has been elected president of the Arctic Club.——Dr. Theodore D. Burger has been elected a member of the school board of Spokane.——Dr. George H. T. Sparling, now health officer of King County, has been elected health officer of Walla Walla County, effective, July 1.——Dr. Frank J. Van Kirk and Dr. William D. Kirkpatrick have been reelected members of the board of directors of the Bellingham Savings and Loan Association.——Dr. Darcy M. Dayton, Tacoma, addressed the Gray's Harbor Medical Society, March 6, on "Infant Feeding."

Senate Disapproves Cult Amendment.—An attempt by the cults to drive a wedge into the workmen's compensation practice was thwarted by the senate when it defeated the Heifner amendment. The cultists, the *Health Messenger* says, tried to amend a bill whereby other remedial treatment lawfully practiced in the state could be given to persons entitled to medical treatment. The bill was to provide insurance for firemen. Senator Heifner's suddenly proposed amendment was killed by the senate after Drs. J. C. McCauley, Ellensburg, and Dr. Warner M. Karshner, Puyallup, members of the senate, led the fight against it.

GENERAL

Conference of Air Medical Examiners.—The medical director of the air regulations division of the U. S. Department of Commerce will hold a conference of all medical examiners of the aeronautics branch of the department in Room 704 Commerce Building, Nineteenth Street and Pennsylvania Avenue, N.W., Washington, D. C., May 19, 5 p. m. All air medical examiners who are attending the meeting of the American Medical Association are requested to be present, and other physicians interested are cordially invited to attend.

Summary by States of Tuberculosis Control.—The National Tuberculosis Association has published the report of Dr. Robert E. Plunkett, director, division of tuberculosis, N. Y. State Department of Health, on the results of a study of state health department supervision in the control of tuberculosis for each state. There are tables based on information contained in reports received and on data relating to the reporting of tuberculosis in New York, exclusive of New York City. The reports from the states are based on questionnaires returned by health departments. There are also given, by states, the legal requirements with regard to tuberculosis, the number of sanatoriums and dispensaries, the activities of the tuberculosis bureau and the amount of money appropriated for tuberculosis work, the death rates, the case rates, and the number of cases reported in 1924 in each state.

Physical Therapy Meeting in Washington.—There will be held at the Lee House, Fifteenth and L streets, Washington, D. C., a meeting of the American Academy of Physiotherapy, May 16-17. In the symposium on malignant growths, Monday, papers will be presented by Drs. Charles Reid Edwards, Robert E. Fricke, William L. Clark, Howard A. Kelly and Grant E. Ward. Dr. Ray Lyman Wilbur will give an informal address on Tuesday morning, May 17. There will also be papers by Drs. John J. MacPhee, emeritus, on "Galvanism in Cerebral Conditions"; "Peripheral Facial Paralysis," Frank B. Granger; "Physiotherapy in Dermatology," William D. McFee; "Observations on the Treatment of Arthritis," Harry C. Westervelt; "A Historical Review of Physiotherapy," Frank A. Davis, and moving pictures of cases treated with physical therapeutics by Drs. Corbusier and Hutchins. Tuesday afternoon there will be a clinic at the Walter Reed General Hospital.

Death of Dr. Erwin Frink Smith.—The U. S. Department of Agriculture lost one of its most distinguished scientists in the death of Dr. Erwin Frink Smith, April 6, aged 73. Dr. Smith was in charge of the laboratory of plant pathology of the bureau of plant industry, and had been in the service of the Department of Agriculture for forty years. He was a leader in the development of the science of plant bacteriology and his discoveries and demonstrations covered a wide range of experimentation. His work on plant cancer was perhaps the most important. Struck by the superficial resemblance between the olive tubercle and the outgrowth of the Paris daisy, which he knew from previous experiments to be due to bacteria, Dr. Smith took up in 1904 an intensive study of the olive tubercle; he believed in the probability that cancer in man and animals was due to similar organisms, and his work in this field has attracted world-wide attention. Among the honors conferred on Dr. Smith at home and abroad was his election to the presidency of the American Society for Cancer Research in 1924, his appointment as a trustee of the Marine Biological Laboratory, Woods Hole, Mass., and a certificate of honor from the American Medical Association for his work on cancer in plants.

Society News.—Dr. James W. Jobling, New York, was elected president of the American Association of Pathologists and Bacteriologists at the annual meeting, April 15; Dr. Edward B. Krumbhaar, Philadelphia, vice president; Dr. Frank B. Mallory, Boston, treasurer; Dr. Howard T. Karsner, Cleveland, and Major George R. Callender, U. S. Army, a member of the council.——Dr. Joseph Erlanger was reelected president of the American Physiological Society at the annual meeting, April 14-17, at Rochester, N. Y.; Walter J. Meek, Ph.D., Madison, Wis., reelected secretary; Dr. Alexander Forbes, Milton, Mass., reelected treasurer.——Dr. Joseph E. G. Waddington, Detroit, was elected president at the annual meeting, Kansas City, April 9, of the Western Physiotherapy Association, the name of which organization was changed to the Western Association of Physical Therapy.——Alpha Mu Pi Omega Medical Fraternity will hold its thirteenth biennial meeting of the grand chapter at the Hotel Willard, Washington, D. C., May 16, 10 a. m.——At the annual meeting of the American Society for Experimental Pathology, April 14-16, at Rochester, N. Y., Dr. David Marine, New York, was elected president; Dr. Edward B. Krumbhaar, Philadelphia, vice president, and Dr. Carl V. Weller, 1020 Ferdon Road, Ann Arbor, Mich., secretary.——Persons desiring to read papers before the International League Against Epilepsy which meets in Zurich, Switzerland, in August, should communicate with Dr. George Kirby Collier, 80 East Avenue, Rochester, N. Y., or Dr. Arthur L. Shaw, The Olbiston, Utica, N. Y.

Deaths in Other Countries

K. Oosawa, a professor emeritus of the Tokyo Imperial University Medical Faculty, Japan, and the pioneer of medical research in that country, January 10, of cancer, aged 76.——**Louis Schnyder,** president of the Swiss Society of Neurology, Berne, aged 59.

CORRECTIONS

Serum Sensitization from Diphtheria Toxin-Antitoxin.—In the article by Dr. Chester A. Stewart, published in THE JOURNAL, April 16, the second line on page 1222 should have read "accomplished by the use either of anatoxin or of toxin" instead of "accomplished by the use either of antitoxin or of toxin."

Hospital Accredited for Nurse Training.—In the Hospital Number of THE JOURNAL, March 12, the Sterling Public Hospital, Sterling, Ill., was reported as not accredited for nurse training. The state department of registration and education, which thus reported the hospital to this office, now writes that this training school for nurses has been accredited for a number of years.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 16, 1927.

Increased Pay for the Army Medical Service

In the House of Commons, the government asked for an increased vote of $300,000 for the army medical service. This is in part due to improvements in pay and conditions of service of army physicians. For some years past the army medical service has not attracted sufficient young men to maintain the numbers required. Complaints have been made by the medical profession, vigorously supported by the British Medical Association, of the inadequacy of pay, of the frequency of moves, and of the length of foreign service tours. Speaking in the House of Commons the secretary of state for war regarded many of these complaints as well founded. He added that though he took steps immediately it was some time before the new conditions could be put into force. The cabinet appointed a committee to inquire into the pay and conditions of service in the medical branches of the three fighting services, as it was impossible to deal with one without the others. Following the report of the committee, improved terms and conditions of service were granted in July, 1926. The result is that the British Medical Association is now recommending service in the Royal Army Medical Corps as a career for young qualified physicians. But the secretary complained that he still wants more candidates. There are two features of the new conditions. Those who take up a house appointment can, under certain conditions, get an antedate commission; in other words, the service in an appointment of the hospital will count as service in the army. The other innovation is that, after seven years' service, an officer can retire with a gratuity of $5,000. This may be attractive to young physicians who want to see a bit of the world before settling down in civil practice, and to whose capital an addition of $5,000 may prove useful.

Social Conditions and Acute Rheumatism

An inquiry on social conditions and acute rheumatism has been made simultaneously in London and in Glasgow under the auspices of the London Committee for Child Life Investigation, which is one of the standing scientific committees appointed by the medical research council. The relation of rheumatism to environment occupied the greater part of the investigation, in view of the heavy incidence of rheumatism among children of the hospital class. But the incidence was found not in direct relation to the degree of poverty. If the hospital patients were divided into three classes according to the degree of poverty, the poorest showed a lower incidence of rheumatism than the other two. It seems, therefore, that if poverty is a factor it must be on account of some associated condition or conditions not equally present in all degrees of poverty. A comparison between the rheumatic and nonrheumatic children in respect of home conditions seemed to show that in the rheumatic families the maternal care was less good, and therewith exposure to cold and wet was more common and clothing less satisfactory. The housing inquiry threw but little light on the problem; dampness, which has generally been credited with playing a large part in the causation of rheumatism, was only slightly more frequent in the houses of the rheumatic families than in those of the others. Overcrowding of rooms did not seem to be commoner among the rheumatic families than among the controls, nor was there any appreciable difference between the two as regards sanitation in London; but in Glasgow the proportion of rheumatic families living in houses with bad sanitation was appreciably larger. Neither ventilation nor lighting appeared to be any worse in the homes of the rheumatic families than in those of the controls. An unhealthy throat was noted in a higher proportion of rheumatic children than in nonrheumatic, but the difference was not large. It was perhaps significant that among the children in the poor-law institutions in the London area the proportion of healthy throats was much higher than among children of the same class living in their own homes. This suggests that environment plays some part in the production of unhealthy tonsils, and that this is one direction in which environment affects the incidence of rheumatism. The effect of tonsil operations was investigated. It was found that neither cutting nor enucleation was any guarantee of immunity from rheumatism; out of 295 rheumatic children who had had their tonsils surgically treated, 129, or 43.7 per cent, developed rheumatism for the first time subsequently, and this although in about half the number the treatment had been complete enucleation of the tonsils. While, therefore, an unhealthy state of the tonsils may favor the onset of rheumatism, it is clearly not an essential factor. Statistical evidence seems to confirm the association between unhealthy tonsils and rheumatism, though it does not prove that the rheumatism is a result of the tonsil condition; the converse, indeed, might be true.

National Health Insurance and the Coal Strike

The inherent defects of socialistic legislation is once again illustrated by the effect of the coal strike on the national health insurance scheme. On a vote for a supplementary estimate for England of $1,100,000 in the house of commons, the secretary to the ministry of health said that there had not been a marked epidemic during the year. There had been a wholly exceptional increase in claims on certain approved societies, especially in the coal mining areas. This led to increased expenditure for drugs, necessitating an extra grant of $125,000. The ministry of health regarded this as a very serious matter. The claims on the approved societies had exceeded those of 1925 by not less than $12,540,000. The distribution of this expansion of sickness benefit corresponded closely with the incidence of unemployment due to the coal dispute. The sickness experience of the country was fairly normal up to May, when there was a tremendous rise in the expenditure of the approved societies. After the termination of the coal dispute the average weekly expenditure of certain specially affected societies dropped as much as one third. In times of industrial depression there were, no doubt, persons whose condition bordered on incapacity but who remained at work as long as work was available. When work was no longer available, such persons might properly be entitled to a medical certificate of incapacity; but the minister of health could not escape the conclusion that a large number of insured persons had succeeded in obtaining medical certificates although they were not incapable of work within the definition of the insurance act. This had been confirmed by the large number of cases referred to the medical referees. A high proportion of claimants were referred to the medical referees. Of these, about 40 per cent signed off in preference to presenting themselves for a medical examination. As to the remainder, the examination by the medical referees showed that instead of 80 per cent being found incapable of work, which was the usual experience, only about 66 per cent were found to be incapable of work.

The subject gave rise to an animated debate in the house of commons. Dr. W. E. Eliot (parliamentary under secretary for health) said that he had every desire to avoid the unpalatable conclusion that the $465,000 by which the sick-

ness benefit for Scotland had increased was due to some extent to maladministration, but he could not entirely acquit the administration, particularly the medical administration, from a share in the rapid increase. It was not due to a great increase of sickness. In the debate that followed, the curious result was witnessed of the labor members defending the medical profession against the aspersions cast on it. But the reason was obvious: the labor members were in favor of any expenditure on the class they are supposed to represent, regardless of circumstances. Indeed, one woman member let the cat out of the bag by saying that the insurance physicians "had behaved like decent citizens and men with some humanity." Of course, the point is that benefit under the insurance act is only for persons disabled by sickness from working and not a means for the unemployed to replace their wages. Last October the ministry of health, noticing the abnormal claims, brought the matter before the medical panel committees, and the Insurance Acts Committee of the British Medical Association wrote to the local medical panel committees asking that insurance physicians be urged to bear in mind the strict conditions with which claims for sickness benefit were surrounded, and not to allow any pressure on economic grounds to interfere with their full observance. It is evident that the Insurance Act places physicians in a difficult position under such conditions as the coal strike. Not only were they confronted with doubtful individual claims, but collective pressure was brought to bear on them. It may be remembered that physicians were mobbed by miners because they were not as complaisant in the matter of certificates as was desired.

Fatal Devotion to Duty of a Physician Who Worked with a Broken Leg

A striking instance of devotion to duty is shown by the death of Dr. Percival Butler of Arnold, Nottingham, who has just died. Last June Dr. Butler was called to two painters who had fallen from scaffolding. On getting out of his motor car, he was knocked down by a motorcycle and one of his legs broken. In spite of his injuries he insisted on going to the men, though he had to be carried from his car to them. The shock to the physician's system caused by the strain so undermined his health that he was never well again.

Increase in Number of Physicians

In the new medical register, 52,614 physicians are enrolled. This contrasts with 42,378 at the end of 1914, and 50,035 at the end of 1924. Last year the names of 2,120 newly qualified physicians were added and 1,159 names were removed.

Proposed London Clinic for the Treatment of Rheumatism

The International Society of Medical Hydrology has collected many data with regard to rheumatism in England and in the northern continental countries which are especially affected by rheumatism and in which rheumatic disablement is a heavy economic burden on industry. A committee on rheumatism announces that a scheme for a demonstration clinic for physical treatment in London has been framed. It will treat from 200 to 400 cases a day, out of an insured population of 2,400,000 persons in the metropolitan area, who could never hope to go to the spas and who need treatment after working hours. Hydrotherapy, with pool and local baths, hot air and manipulation, will be provided, together with a department for light and electrical treatment and a hall for remedial exercises, the whole under the direction of physicians who have had special experience in these forms of physical treatment. It is proposed that the clinic shall work in close cooperation and association with the general hospitals, so that patients may go freely from the hospitals for treatment at the clinic, and from the clinic for special treatment at the hospitals. The clinic will also refer suitable cases to the spa hospitals, and other health resorts. Moreover, it will be in connection with laboratories having special facilities for investigation of rheumatic cases.

PARIS

(From Our Regular Correspondent)

March 30, 1927.

Theinism in Tunisia

Dr. Dinguizli, head of the native medical service in Tunisia, has called attention to the appearance and rapid spread of theinism in that country. With the opening of the war, the consumption of tea was practically nil, since the population was devoted to Turkish coffee. Contact with the allied troops developed a taste for tea. In 1917, the importation of tea (for the most part, of a poor quality) reached 100,000 Kg. In 1926, the importations had risen to 1,100,100 Kg.; that is to say, they had increased more than ten fold in nine years. Physicians are beginning to observe numerous effects of theinism heretofore unknown; more particularly, digestive, nervous and circulatory disorders; disturbances of vision, and general weakness. Furthermore, the birth rate has diminished perceptibly among the groups of natives who have developed an inordinate fondness for tea, in comparison with those groups that have remained for the most part unaffected. Also the essential characters of the groups that have developed an uncontrolled tea-drinking habit have changed. Whereas they had been docile, they have become excitable and subject to attacks of fierce temper, displaying also a fondness for idleness. They are losing their taste for work and for thrift, and are selling their meager furnishings and belongings to secure funds with which to gratify their new passion. Thievish habits are becoming more common. Man power is becoming scarcer, and workmen are less diligent about their work. Labor contracts are not accepted unless employers guarantee to furnish workmen tea and sugar. Bolshevism, propagated by Russian agents, finds among the workmen ready listeners. M. Dinguizli recommends that prophylactic measures be taken against this new cause of physical and moral weakening of the population. He suggests that the importation of tea be restricted and that a publicity campaign setting forth the dangers of excessive tea drinking be launched with the aid of the imams, or Mohammedan priests, who conduct the services in the mosques, and also with the help of motion pictures, of which the people are very fond.

The Radium Trust

Professor Matignon has called the attention of the Academy of Sciences to a fact of seeming grave import for the public health. It concerns the acquisition of radium, which is being more and more used for treatment, and which has become indispensable, especially in the treatment of neoplasms. The high cost of the metal serves as a drawback and prevents its more general use among a large part of the population. However, in recent years, rich deposits of radium have been found in many regions of the earth, particularly in Upper Katanga, in the Belgian Congo. The radium mines of Chinkolobwe, the richest in the world today, supply an ore that is imported and the radium extracted at the works located in Oolen, Belgium. It has recently become known that the management of these works has received orders from the owners to restrict the output in order to maintain the price of radium at its present high level. Professor Matignon has become intensely aroused over this revelation in the domain of public health.

The Diminishing Bread Consumption in France

Numerous reports sent in to the ministry of agriculture announce the constantly diminishing consumption of bread,

which Frenchmen heretofore used in larger quantities than any other people in the world. The new movement began last year, at the critical stage of the fall of the franc, on the recommendation of the public press that, since the French wheat crop was insufficient, less wheat bread be eaten, in order to reduce the purchases of wheat in foreign markets. At the same time, the government, with the same purpose in view, issued an order requiring bakers to mix with wheat flour other cereals, such as rye, barley and rice, as was done for a time during the war. But the rye crop was as deficient as the wheat crop, while rice flour proved to be ill adapted for bread making. The bread made of mixed ingredients was not relished by the consumers. In Paris, the skill of the bakers, together with only partial compliance with the requirements of the order, made it possible to get along with the new product. In the provincial cities, and particularly in the rural districts, the bread made according to the new requirements was found unpalatable. In many instances, it had to be fed to animals. Physicians admitted that they encountered many cases of flatulence resulting from inadequate mastication of the new bread. The consumption of bread everywhere fell off to such an extent that the French crop, although still below normal, may prove to be sufficient, so that further importations of wheat may not be needed. The economic result sought has thus been accomplished. But hygienists are calling attention to the fact that bread is the cheapest source of physical energy for the manual laborer. In diminishing the bread ration, workmen have taken to eating more meat, which is more expensive, and to drinking more wine, the effects of overindulgence in which are well known. The result has been throughout France an increase in the prices for meat and a growing amount of alcoholism among the laboring classes. The grave side of the matter is that it will be extremely difficult to get workmen to renounce the bad habits of diet that have been thus acquired. These observations furnish renewed proof of the correctness of the view of economists that it is always dangerous to disturb an established equilibrium even though such equilibrium may not be the very best.

ITALY

(From Our Regular Correspondent)

March 15, 1927.

Regulations in Regard to the Notification of Infectious Diseases

The ministry of the interior has noted that certain sanitary bulletins and foreign journals occasionally report cases of exanthematous typhus in certain localities of the kingdom when no evidence of the disease can be found. On the supposition that such reports are due to the erroneous interpretation of the term "abdominal typhus," with which typhoid is at present designated, the ministry has ordered that, henceforth, in all notifications of infectious diseases the term "typhoid fever" shall be used to indicate the infection due to Eberth's bacillus.

Compensation for Industrial Accidents

The statistics for the first nine months of 1926 show that the Cassa nazionale per gli infortunii sul lavoro issued 82,004 new policies, thereby affording protection to 987,751 more industrial workers. During the same period it received notification of 151,792 industrial accidents and expended 70,541,057 liras ($3,033,265) for compensation in 139,464 cases, of which 573 were fatal and 8,717 presented permanent disability. As compared with the corresponding period of 1925, these figures show an increase, respectively, of 8,761 policies, 107,263 workers, 9,624 notifications of accidents, and 15,240,601 liras ($655,345) expended for compensation.

In the field of agriculture, the institute received 37,160 notifications of accidents, and expended 13,086,276 liras ($562,709) for compensation in 29,550 cases, of which 516 were fatal and 3,270 presented permanent disability.

A Prize Contest in Ophthalmology

The Società italiana di oftalmologia, in addition to a number of national prizes, has announced for 1927 an international prize contest, with a cash award of 20,000 liras ($860) and two gold medals to be conferred on the authors of the best original articles on ophthalmology written in 1926. The article or work must reach the society, "presso la Clinica oculistica di Roma," by September 30. Professors who are occupants of university chairs and persons who are more than 45 years old are barred from the contest.

A Chair of Social Insurance

By a recent decree, the chair of legal medicine of the University of Palermo has been amplified by the organization of an official course in social insurance. The course will be conducted by Professor Mirto, the occupant of the chair of legal medicine. With the view of giving the students special training in this field, and of developing in them a just sense of medicolegal valuation, Professor Mirto will establish also a dispensary for the treatment of persons suffering from accidents.

Modification of the Law Pertaining to Vivisection

The senate of the kingdom approved recently a modification of the law pertaining to the protection of animals used for vivisection. Scientific experiments consisting of operations on living animals, including mammals and birds, are permitted solely in scientific institutes, according to the instructions and on the responsibility of the respective directors. If the animals to be used are dogs, they may not be kept in the vicinity of the hospitals, lest the tranquillity of the patients be disturbed. The use for further experiments of animals previously subjected to operative interventions is prohibited, unless that is absolutely necessary for scientific reasons. Any violation of the foregoing regulations shall be subject to a fine.

Appointment of Professor Frugoni

The Faculty of Medicine of the University of Padua has called Prof. Cesare Frugoni, director of the Institute of Medical Pathology at the University of Florence, to the chair of clinical medicine, to succeed Professor Lucatello. This young scientist, a native of Brescia, after graduating in 1905, became a pupil of Aiuto del Grocco, and, except for a brief period spent in Pavia with Camillo Golgi, he has always been associated with the Florentine school. He is the author of many scientific works, which contain important contributions on arteriosclerosis, Erb's disease, oral auscultation and sodoku (of which he described the first case in Europe). His protracted researches on bronchial asthma have developed new conceptions in regard to that disease.

The Child Problem

Mussolini, the head of the government, who is directing ever greater attention to child welfare, has recently addressed a circular letter to the prefects of the realm, in which he emphasizes his previous regulations concerning competitive examinations for positions under the Ufficiale sanitario dei comuni and the "privileged consideration" examinations for physicians who seek service on board merchant vessels. The regulations provide that the competitive examinations shall pay particular attention to questions pertaining to the diseases of childhood, milk and infant feeding, foundling hospitals, children's hospitals, and special legislation relative to the protection and welfare of mothers and children.

GENEVA

(From Our Regular Correspondent)

March 4, 1927.

Vaccination

During the year 1926, there were seventy-one physicians in the Canton de Vaud appointed as public vaccinators. These physicians made 3,906 vaccinations, with 3,834 positive results, twenty-nine negative results and forty-three unknown results. The proportion of successful results is therefore 99.25 per cent. If to these figures are added those of the university polyclinic of Lausanne (316 vaccinations with 315 positive results), there is a total of 4,222 vaccinations giving 4,149 positive results and forty-four unknown results, which gives a general average of 99.33 per cent positive results, one of the largest ever recorded. The vaccine used was made by the Swiss vaccine institute at Lausanne.

Results of Treatment with "Sanocrysin"

From a study of the treatment of tuberculosis with "Sanocrysin," Drs. R. Burnand and M. Gilbert of Leysin have reached provisionally the following conclusions: This product is not devoid of some action on tuberculous pulmonary lesions, but they have seen only one case out of a total of thirteen in which the changes in the foci were sufficiently marked and durable to enable them to foresee a possible chance of cure. Not one of the patients who had received a complete series of injections representing 10 Gm. of "Sanocrysin" was cured—that is to say, cicatrization of the foci had not taken place in any of them. On the other hand, these observers noted a transitory improvement only too often followed by return of the process, even before cessation of the injections. Hence, they have not the impression that "Sanocrysin" possesses a "specific" action such as is possessed by modern antisyphilitic medication. They regard "Sanocrysin" as producing "shock" or that it was an elective effect—such as is the case with tuberculin—inducing a useful congestion in the foci. It is as yet a question whether or not this insufficient and imperfect therapeutic action is due to the dosage and manner of administration. This is quite possible, but so far it is not proved. They are, however, of the opinion that before placing this so-called specific on the list of the innumerable antituberculous medicaments that have been forever given up, it may still be experimented with by varying the technic of its use. The effects they have obtained they believe merit further experiment.

In the discussion, Dr. J. Morin of Leysin said that numerous observers, especially Knud Faber and Leon Bernard, had insisted on the effacing of radiologic signs of tuberculosis noted after treatment with this product, quite similar to that observed after long treatment in sanatoriums. However, it was common at Leysin for marked retrogressions of serious tuberculous processes to take place in from four to three months, or even in six weeks, without a single dose of "Sanocrysin" having been given. Therefore it is essential, before accepting a relation of cause and effect in the use of any remedy, to recall with what great rapidity radiologic changes may ensue, resulting in disappearance of the morbid image.

Morin stated that in three out of five patients that he had treated with "Sanocrysin," death ensued, and he pointed out that his results tallied with those of Besançon, Braun and Azoulay, who out of a total of fourteen cases treated had five aggravations, seven deaths and, perhaps, two ameliorations. Czerny, who treated twelve cases with "Sanocrysin" had eleven deaths.

Charlatans' Misuse of Ultraviolet Rays

The ultraviolet rays have been much misused by charlatans. The superior council of public hygiene of France has now been obliged to look into this matter, and the recent report of Professor Bordas is not without interest. Barbers, especially barbers for women, have for some time resorted to a new process for regenerating the growth of hair. The method of these ultramodern Figaros consists in giving new vigor to the capillary sap by means of douches of ultraviolet rays applied directly to the scalp. The apparatus consists of a hollow glass tube ending in one or several minute openings. A vacuum is made in the tube, and the current, on passing through a small induction coil, lights the glass accessories. During the operation, the artist affects to apply the tube with great precaution over the roots of the hair, and the subject, who feels a little prickling from the electrical discharge, does not doubt the efficacious effects of the douche. It is hardly necessary to say that, in these circumstances, ultraviolet rays are not produced. All this is simply a quackish jest which is paid for according to the "client's head." In beauty institutes the application of "blue rays"—such is their name—requires a minute preparation, because the financial result of the operation depends on the *mise en scène*. In these "institutes," baths of blue rays should cause wrinkles to disappear, as well as thickness of the nose, hollow cheeks, double chin, prominent ears and many other unsightly characteristics. The instruments employed are similar to those used by any hair dresser. Ordinary electric lamps (200 candle power) with a special blue glass are used, or the Cooper-Hewitt LVM or quartz lamp with automatic lighting. When the operation is to be undertaken, the client is brought into a private room where the imposing mass of an aluminum reflector invariably produces no little emotion in patients with double chin in search of relief. Professor Bordas shows up the resulting accidents, accidents observed as well by Professor Pech of Montpellier. Therefore, the superior council of public hygiene of France, consulted by the minister of works and hygiene, declared as follows: "That given the serious accidents which may result from the use of ultraviolet irradiations handled by incompetent persons, it is necessary, in the interest of public health, to confine the use of these procedures to hospital services and to authorize their application only by specialist physicians."

International Congress of Military Medicine and Pharmacy

The Swiss Federal Council has decided to be represented at the Fourth International Congress of Military Medicine and Pharmacy, which is to be held at Warsaw from May 31 to June 4. The members of the delegation will be made known later.

Society Meetings

The Swiss Dermatovenerologic Society will hold its eleventh congress at Lausanne, May 28 and 29, while the Swiss Pediatric Society meets at Fribourg at the beginning of June.

At the general meeting of the Geneva Anticancer Center, Prof. Charles Julliard delivered an address on "The Surgery of Cancer." Until the discoveries of Pasteur and Virchow, the treatment of malignant disease was guided by ignorance and empiricism. All sorts of different diseases were confused with cancer and the most extravagant treatments were advised for their cure, such as local applications of elixirs. The time was when twenty green frogs were placed on a so-called cancerous breast in order to suck away the malignant principle. There are still many quacks who exploit human credulity by offering the most unheard of treatment.

The sudden development of bacteriology and pathology transformed surgery of malignant disease. In fifteen years this type of surgery made more progress than during the fifteen hundred preceding years. A real cancer surgery has developed, which possesses its laws and perfectly defined rules. Among these are: (1) free excision of the diseased part; (2) the necessity of early operation, and (3) the

necessity of removing, along with the neoplasm, all the lymphatic vessels and lymph nodes. The question of the operability of cancer was fully discussed by Professor Julliard. Although the surgery of cancer seems to have reached its acme, certain details undoubtedly will yet be perfected. Going further, the roentgen ray and radium have given proof of their efficaciousness and are being thoroughly studied by the anticancer center of Geneva.

VIENNA

(From Our Regular Correspondent)

March 29, 1927.

The Influenza Epidemic in Vienna

Several weeks after all western and northern Europe had suffered from the influenza epidemic, it finally found its way to Vienna. Although only 184 cases have been officially reported, resulting in five deaths, the more than 2,000 physicians of the krankenkassen are treating, on the average, ten influenza patients each, which would point to 20,000 patients among the insured members of the health insurance societies, and at least 30,000 patients in Vienna as a whole. The course of the disease has thus far been very mild. Coincident with the influenza epidemic there is a severe measles epidemic with ear complications.

Vocational Guidance and Its Physiology

The eighth convention for the promotion of vocational guidance was held in Vienna recently. Prof. Dr. Durig called attention to the failure (in Europe, at least) of "Taylorism" and "Fordism." In order to establish the value of a test to determine the aptitude for a definite form of activity, one must endeavor to avoid self-deception and must not conceal the incongruities. The fact must not be overlooked that there are various types of human beings: some who can accomplish much in almost any position; some who never seem to be in their proper place, and some onesided persons whose performance is characterized by hypertrophic tendencies in one direction or another. Owing to the present bad economic situation in Europe, almost no importance is attached to bodily condition in the choice of an occupation. It is even worse with respect to the intellectual callings. The secondary schools do not constitute an adequate aptitude testing medium for university study. There is as yet no objective aptitude test, and if there were, it would not furnish absolute protection against errors of diagnosis and prognosis. Beethoven, for example, who was sprung from an otosclerotic family, would have been advised, because of his hereditary tendency to deafness, to suppress his desire to become a musician and to become, because of his strong physique, a locksmith or blacksmith. A scientifically exact method of testing aptitude selects only the most fit; an empiric testing establishes only what persons will perform a definite piece of work in the shortest time. Such an arrangement leads to highly specialized training in the performance of minute tasks, as only in this manner can the highest performance be attained; but this high intensity of production is often achieved at the expense of health. This system has been worked out in the United States with the greatest detail, and Ford and Taylor disapprove of group labor and prefer "piece work," in which each workman performs his own specially assigned task. The physiology of vocational guidance must first establish new bases before there can be any question of introducing in any general way compulsory testing of vocational aptitude.

In the discussion that followed the address, Dr. Rossenstein stated that in Germany 80 per cent of the decisions of vocational guidance experts were proving to be correct. The relation between aptitude and fondness for a definite form of work is important for the reason that workmen who are fond of their work are more likely to produce work of a high quality. Vocational guidance with reference to pathologic individuals (especially children and girls) was discussed by Dr. Lazar and Frau Dr. Herz. A large percentage of those who manifest immoral tendencies have some physical or mental abnormality. It has been noted especially that dissatisfaction with one's calling is liable to produce moral weakness. It is therefore important to give such persons correct advice and to restore their self-confidence by the proper use of their capabilities.

The Supply of Medicinal Plants

In spite of the immense development of the medicochemical industry, a large number of plants is still used in pharmacology. The demand for these plants has, in fact, increased in recent years because manufacturers find it easier to derive certain active substances from plants than to produce them synthetically. To mention only a few—digitalis, opium, the principles of rhubarb; quinine, and the principles of marshmallow and aloes, are used preferably in natura. As a result, in large sections of central Europe, and also in France, Italy and Russia, the planting of medicinal herbs has been greatly increased. Through the attention given to the subject by the various governments and by pharmacologic interests, the "Mitteleuropäische Tagung für Arzneimittelversorgung" was recently organized in Vienna, and, during the two-day session, the various problems pertaining to the collection and the marketing of medicinal herbs were thoroughly gone over. It was decided to make the work international in scope, and a central bureau will be established in Vienna, which will collect and furnish information in regard to all European stocks of medicaments of both vegetable and nonvegetable origin. The organization will inure to the benefit of both producers and dealers. In experiment stations to be erected the best methods of growing the several varieties of medicinal plants will be carefully studied. The cultivation of medicinal plants (and also of tobacco) permits the profitable use of soil that is not suitable for grain and cattle raising. The Institute for Pharmacognosy of the University of Vienna has assumed the task of organizing the international committee; it will also work out plans for government support.

BERLIN

(From Our Regular Correspondent)

April 2, 1927.

Retirement of Geheimrat Kraus

March 31, a large gathering of pupils and friends of Geheimrat Kraus assembled in the auditorium of the II. Medizinische Universitätsklinik to pay him their respects, in view of his retirement from active service. The ministry of public instruction has established for him in an institute of the Kaiser Wilhelm-Gesellschaft a laboratory in which he will have an opportunity of continuing his researches. At the close of the evening, the bust of Kraus, from the chisel of Lederer, funds for which were supplied by his pupils, was unveiled before the entrance of the clinic, opposite the bust of Traube.

The Increase of Diabetes

Before the Berliner Verein für innere Medizin, Dr. Ullmann, assistant of the II. Medizinische Universitätsklinik der Charité, delivered recently an address in which, on the basis of a vast statistical material, which pertained to Germany and other European countries and also to the United States, he discussed the question whether diabetes had increased in recent years. As there is no compulsory notification of diabetes, only the mortality statistics can be utilized to answer the question. An examination of the figures shows that everywhere, with the decline of the general mortality, there has been an upward trend in the mortality from diabetes.

During the war, a fall in the mortality from diabetes was generally observed; in Berlin, for example, it dropped during the years from 1914 to 1920, since which time it has been steadily rising. There is no doubt that this decline in mortality was due to undernutrition, which, during the war, affected Germany to a very marked extent, and influenced also other countries more or less. Even the United States, which, in 1918, resorted to a slight extent to the rationing of foodstuffs, shows during this period a slight decline in the mortality from diabetes. During the war the decline in the number of patients with diabetes was not so marked in the rural districts, since there the food shortage was not felt to the same extent as in the cities. It is not, therefore, as was formerly assumed, an overwrought condition of the nerves that produces diabetes but rather a luxurious way of living. Participation in athletic sports may be regarded, therefore, as a means of preventing the development of diabetes. The incidence of diabetes is now rather higher among women than among men, whereas formerly the reverse was true. In private practice, the influence of heredity may be observed in a third of the cases; it has been noted, too, that the disease appears not only in the dominant but also in the recessive types of offspring. Brugsch regards diabetes as a factor tending toward the degeneration of the population, and in order to combat such influences the presence of an hereditary predisposition should be recognized as early as possible.

A Prize Offering in the Field of Eugenics

The Berliner Gesellschaft für Rassenhygiene has made a prize offering for the purpose of awakening interest in eugenics. The production of a film is desired which, while excluding all forms of political and religious propaganda, shall give a clear idea of the most important principles of the theory of hereditary transmission in man; especially concerning the dangers of degeneration and the ways and means of preserving the valuable physical and mental qualities that are the heritage of the German people. Not only detailed scenarios but also film stories and sketched tables of contents may be submitted. The first prize is 300 marks and the second prize 150 marks.

The Institute for Research on Hereditary Transmission

The Emperor William institute for anthropology, hereditary transmission in man, and eugenics, which is being erected in Dahlem, near Berlin, by the Kaiser-Wilhelm-Gesellschaft, is rapidly nearing completion. Prof. Eugen Fischer, anatomist, of Freiburg, will be the director of the institute. He will also be the head of the department of anthropology. The department for hereditary transmission in man will be in charge of Professor Muckermann, a former Jesuit father. The head of the department of eugenics has not yet been announced. It is hoped that the new institute can be dedicated in September, in connection with the meeting of the International Congress on Heredity, which is to be held in Berlin.

Marriages

ABRAHAM ALLEN GOLDBLOOM, Pittsburgh, to Miss Ruth Held of New York, at Berlin, Germany, April 10.

BEECKMAN J. DELATOUR to Miss Elisabeth Worthington Bull, both of New York, April 19.

LYLE B. WEST, Chattanooga, Tenn., to Miss Henrietta Adams of New York, February 6.

ROBERT EMERY BRENNAN to Miss Adele Bowne Carpenter, both of New York, April 14.

SYLVESTER GUY PAKE to Miss Frances Cheney Ford, both of Duluth, Minn., April 9.

Deaths

Edward Emmet Montgomery ✠ emeritus professor of gynecology at Jefferson Medical College, died at the home of his daughter in Bala near Philadelphia, April 17, following an influenzal infection. Dr. Montgomery was born in Ohio in 1849 and graduated from Jefferson Medical College in 1874. He served as intern and later on the staff of the Philadelphia General Hospital. From 1886 to 1891, he was professor of gynecology at the Medico-Chirurgical College of Philadelphia and later also professor of obstetrics. In 1892 he became professor of gynecology at Jefferson Medical College, holding that position until 1921, when he became professor emeritus. He was for several years on the staff of the Woman's Hospital of Philadelphia and for many years president of the staff of St. Joseph's Hospital. Dr. Montgomery held several official positions in the American Medical Association, having been a member of the House of Delegates in 1903 and 1915, first Vice President in 1910, chairman of the Section on Obstetrics and Diseases of Women, 1891 to 1892, and a member of the Board of Trustees from 1893 to 1908. He was a past president of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, of the Philadelphia County Medical Society and the Pennsylvania State Medical Association, was the author of the well known textbook "Practical Gynecology" and a contributor to the American Text Book of Gynecology, Keen's Surgery and other works.

Frank Banghart Walker ✠ Detroit; Detroit College of Medicine and Surgery, 1892; emeritus professor of surgery, formerly secretary, registrar, assistant demonstrator of anatomy, demonstrator, adjunct professor and professor of operative surgery at his alma mater; past president of the Detroit Surgical Society; at times on the staffs of the Woman's, Shurly, St. Mary's and Providence hospitals, Detroit, the Michigan State Home, Lapeer and St. Joseph's Retreat, Dearborn; served in France as chief surgeon of Base Hospital number 36 during the World War; aged 59; died, April 11, of coronary thrombosis.

Jay Bergen Ogden, New York; Medical School of Harvard University, Boston, 1893; member of the Massachusetts Medical Society; formerly instructor in chemistry at his alma mater and Tufts College Medical School, Boston; at one time on the staffs of the Boston City and Carney hospitals, Boston, and the Long Island College Hospital, Brooklyn; aged 58; died, April 2, at his home in Forest Hills, of pernicious anemia and valvular heart disease.

Carey Judson Vaux ✠ Pittsburgh; University of Pittsburgh School of Medicine, 1899; director of public health of Pittsburgh; established quarantine against pneumonia in Pittsburgh; lecturer on preventive medicine at his alma mater; past president and secretary of the Allegheny County Medical Society; served during the World War; aged 51; died, April 15, at St. Francis Hospital, of peritonitis, following a cholecystectomy.

Bradford Kent, Boston; Medical School of Harvard University, Boston, 1902; member of the Massachusetts Medical Society; instructor in pulmonary diseases and climatology at Tufts College Medical School; past secretary of the Norfolk District and South District Medical societies; for many years on the staffs of the Boston City and Boston Consumptives' hospitals; aged 50; died, April 8, following a long illness.

David Clark Huffman, McKeesport, Pa.; Jefferson Medical College of Philadelphia, 1866; member of the Medical Society of the State of Pennsylvania; past president of the Montgomery County (Ohio) Medical Society; formerly connected with the National Military Home, Dayton; Civil War veteran; aged 83; died, March 29, at St. Cloud, Fla., of senility.

Gedide Abraham Friedman ✠ New York; University of Jurjev, Russia, 1894; member of the American College of Physicians; on the staffs of the Gouverneur, Bellevue and Mount Sinai hospitals, and president of the medical board of the Beth David Hospital; on the staff of the Israel-Zion Hospital, Brooklyn; aged 57; died, April 4.

Robert J. Armstrong, New York; Medical Department of Columbia College, New York, 1886; member of the Medical Society of the State of New York; formerly on the staffs of the Misericordia, and Metropolitan Throat hospitals; aged 63; died, March 31, at the Roosevelt Hospital, following an operation for carcinoma of the colon.

John Calhoun Beauchamp, Williamson, Ga.; Southern Medical College, Atlanta, 1882; member of the Medical Association of Georgia; formerly state senator and member of the state legislature; for twenty years chairman of the school board of Pike County; aged 75; died, April 4.

Jacob F. Smith ✠ Brazil, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1886; past president of the Clay County Medical Society; formerly physician in charge of the Lester Smith Hospital; aged 69; died, April 9, at the New Highland Sanatorium, Martinsville, of arthritis.

John Wellington Marsh, Tipton, Mo.; Missouri Medical College, St. Louis, 1881; member of the Missouri State Medical Association; formerly county health officer; for many years member of the school board; aged 66; died, March 29, as a result of cerebral hemorrhage.

Jacob Read Topping, Bridgeport, Conn.; Medical Department of the University of the City of New York, 1882; member of the Connecticut State Medical Society; aged 73; formerly on the staff of the Bridgeport Hospital, where he died, March 6, of septicemia.

Albert Griffith Miller ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1901; member of the American Roentgen Ray Society; formerly on the staff of the Lankenau Hospital; aged 48; died suddenly, April 13, at the Jefferson Hospital.

Charles Peter Krum, Lebanon, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1921; member of the Medical Society of the State of Pennsylvania; aged 29; died recently, at the University of Pennsylvania Hospital, following an operation.

Frank Lucas French ✠ Little Rock, Ark.; University of Arkansas Medical Department, Little Rock, 1882; emeritus professor of anatomy at his alma mater; on the staffs of the Little Rock General and St. Vincent's hospitals; aged 66; died, February 28.

Leigh Klumb Patton ✠ Santa Fe, N. M.; University of Illinois College of Medicine, Chicago, 1913; on the staff of the Sunmount Sanatorium; aged 39; died, April 10, at the Presbyterian Hospital, Albuquerque, of meningitis, probably tuberculous.

Willet Stuart Brown ✠ New York; Medical Department of Columbia College, New York, 1891; member of the American Psychiatric Association; formerly physician in charge of the Sanford Hall Private Hospital, Flushing; aged 59; died, April 2.

Perley Raymond Brenton, Fort Steilacoon, Wash.; College of Physicians and Surgeons of San Francisco, 1901; formerly health officer of Tacoma; on the staff of the Western Washington Hospital, where he died, April 6, of pneumonia, aged 50.

William I. Tyler, Niles, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1889; for twenty-eight years a member of the board of education; aged 61; died, March 17, of heart disease, at San Diego, Calif

Edwin Van Deusen Gazzam ✠ Clearwater, Fla.; University of Pennsylvania School of Medicine, Philadelphia, 1892; member of the Medical Society of the State of New York; aged 61; died, March 15, of cerebral hemorrhage.

Alexander Davidson, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1878; M.R.C.S., England, 1878, Trinity Medical College, Toronto, 1878; on the staff of St. John's Hospital; aged 72; died, February 24.

Joseph Adelbert Beebe, Kansas City, Mo.; College of Physicians and Surgeons, Medical Department Kansas City University, Kansas City, 1901; served during the World War; aged 49; died, March 25, of angina pectoris.

Patrick Henry Swann, Huntington, W. Va.; University of Louisville School of Medicine, 1888; member of the West Virginia State Medical Association; aged 68; died at Orlando, Fla., in March, of cerebral hemorrhage.

Anson A. Cobb, Auburn, Maine; University of Vermont College of Medicine, Burlington, 1892; member of the Maine Medical Association; proprietor of a hospital bearing his name; aged 59; died, March 26.

Edmund C. Jacobs ✠ Durand, Wis.; Kentucky School of Medicine, Louisville, 1892; past president of the Pepin County Medical Society; was found dead in bed, March 23, of heart disease, aged 62.

Albro Richard Carman ✠ White Plains, N. Y.; Medical Department of the University of the City of New York, 1879; member of the American College of Physicians; aged 80; died, March 31.

Henry William Mills ✠ San Bernardino, Calif.; M.R.C.S., L.R.C.P., England, 1895; medical director of the Ramona Hospital; contributor to various medical journals; aged 54; died, in March.

Clarence Albert Beverly, Lilly Dale, N. Y.; Bennett College of Eclectic Medicine and Surgery, 1874; Hahnemann Medical College and Hospital, Chicago, 1877; aged 75; died, March 3.

John Foster Bradley, Clarksville, Ark. (licensed, Arkansas, 1903); member of the Arkansas Medical Society; past president of the Johnson County Medical Society; aged 53; died, March 4.

Jesse J. Magruder ✠ Columbus, Ohio; Long Island College Hospital, Brooklyn, 1872; on the staff of St. Anthony's Hospital for many years; aged 79; died in March, of heart disease.

William H. Finley ✠ Xenia, Ohio; Medical College of Ohio, Cincinnati, 1881; past president of the Greene County Medical Society; aged 69; died, April 5, of cerebral hemorrhage.

Cyril George Field ✠ Fort Dodge, Iowa; State University of Iowa College of Medicine, Iowa City, 1915; on the staff of the Mercy Hospital; aged 37; died, March 4, of tuberculosis.

George Meek Ingham, Milwaukee; University of Illinois College of Medicine, Chicago, 1904; aged 48; died, April 7, following an operation for carcinoma of the stomach.

McMinn M. Pearson ✠ Bristol, Tenn.; Hospital College of Medicine, Louisville, 1889; member of the Medical Society of Virginia; aged 63; died, April 9, of angina pectoris.

Philip William Bohne ✠ New Orleans; Medical Department of the Tulane University of Louisiana, New Orleans, 1905; aged 46; died, March 31, of Hodgkin's disease.

Cyrus Silliman Patterson, New York; Medical Department of the University of the City of New York, 1898; aged 51; died, in March, at Woodmen, Colo., of tuberculosis.

Clayton Reeves Speer, Malta, Texas; University of Louisville School of Medicine, 1910; aged 50; died, January 7, at a sanatorium in Kerrville, of tuberculosis.

Newton M. Smith, Atkins, Iowa; Drake University College of Medicine, Des Moines, 1896; aged 53; died, April 4, at a hospital in Cedar Rapids, of nephritis.

Robert S. Brown, Minneapolis; Bennett Medical College, Chicago, 1895; member of the Minnesota State Medical Association; aged 63; died, April 4.

Charles Francis Traynor ✠ Biddeford, Maine; Medical School of Maine, Portland, 1910; on the staff of the Webber Hospital; aged 53; died, March 15.

Philander B. Taylor ✠ Detroit; Detroit College of Medicine and Surgery, 1904; served during the World War; aged 51; died, March 29, of heart disease.

Drury Young Stem ✠ Slidell, Texas; Vanderbilt University Medical Department, Nashville, 1889; aged 64; died recently, of pneumonia and heart disease.

Henry Thompson White, Hemphill, Texas; University of Tennessee College of Medicine, Memphis, 1900; aged 52; died, February 17, at Beaumont.

Flavius Rollo Smith ✠ Winfield, Kan.; College of Physicians and Surgeons, Keokuk, Iowa, 1889; aged 64; died in March, of cerebral hemorrhage.

Benjamin Homer Bagby, Clarksburg, Mo.; University Medical College of Kansas City, 1889; aged 60; died, February 6, of cerebral hemorrhage.

Pearl A. Beebe ✠ Glenwood City, Wis.; Western Reserve University School of Medicine, Cleveland, 1898; aged 51; died, in March.

John Alexander Mitchell, Drumbo, Ont., Canada; Trinity Medical College, Toronto, 1892; aged 62; died, January 17.

Chester E. Russell, Venus, Texas; Texas Medical College and Hospital, Galveston, 1876; aged 78; died, March 29.

Harvey B. Worley, Wellington, Texas; Kentucky School of Medicine, Louisville, 1894; aged 64; died, January 16.

Aloys Severin Heithaus ✠ Cleveland; St. Louis University School of Medicine, 1911; aged 36; died, February 28.

W. H. A. Bemis, Pope, Miss.; Memphis Hospital Medical College, 1884; aged 75; died, March 4, of paralysis.

Harry Enton, Brooklyn; Long Island College Hospital, Brooklyn, 1885; aged 71; died, March 28.

Walter T. McAmis, Roxton, Texas; Louisville (Ky.) Medical College, 1903; aged 50; died, March 9.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

INTERNATIONAL HEALTH INSTITUTE

Physicians Are Given the Opportunity of Getting in on the Ground Floor

During the past few months the medical profession has been flooded with letters from the somewhat imposingly named "International Health Institute, Inc.," with headquarters at 2061 Broadway, New York City. According to its "sales talk," the International Health Institute purposes to sell to the public a urinalysis and periodic physical examination service "supplemented with a complete course in bodybuilding and rules of right living." While this is the nominal *raison d'être* of the concern, evidence is accumulating to confirm the suspicion that the International Health Institute, Inc., is primarily a promotion scheme.

Dr. John Doe receives a letter from the International Health Institute stating that it desires to establish "a resident physician and member of our Advisory and Hygiene Reference Board" in that community. If Dr. Doe can qualify as "resident consultant," he will be allowed by the International Health Institute to examine the local subscribers to the institute's service. This examination, according to the advertising matter, will be "exhaustive," covering "every region of the body" and including:

"Appearance-Nutrition, Physique and Temperature, the Great Vital Organs including the Heart, Lungs, Stomach, Liver and Kidneys, Spleen, Brain and Nervous System, Genito-Urinary System, and Blood Vessels, the Glands, the Pulse, the Skin, Lymphatic System, the Nose, Throat, Tonsils, Teeth, Mouth, Gums, Tongue, Ears, Eyes, Feet, Posture, Spine, and Extremities. Blood Pressure Test and advice what to do if it has deviated from the normal. Hemoglobin Blood Test for evidences of Anemia."

For giving this thorough physical examination, the doctor who qualifies as "resident physician" will be allowed three dollars!

In many instances the names of physicians to whom the institute has written have been obtained from chambers of commerce of certain cities. These physicians have then been told that they had been "recommended" to the institute by the secretary of the chamber of commerce of their city. Needless to say, the chambers of commerce have made no such recommendations, but have merely sent, as a matter of routine, a list of the physicians in their localities.

Before dealing with its methods, something should be said of the personnel. The International Health Institute was incorporated in New York in December, 1926. The names of the incorporators do not matter, as apparently they were merely figureheads. It seems that while the state of New York requires that three adult residents of the state shall sign a certificate of incorporation, these persons may resign immediately after incorporation. The attorney for the International Health Institute, who drew up the papers of incorporation, used three individuals (possibly clerks or other subordinates) who signed the certificate and who resigned after the issuance of the papers.

The actual individuals behind the International Health Institute are:

GEORGE W. SMITH
CHARLES BERMINSTER MUNRO
JAMES C. LIPSEY
GERARD WARREN PROCTOR

George W. Smith seems to be the moving spirit. It is reported that a few years ago he was connected with a "National Health Bureau of America" and, later, organized and promoted a correspondence school of accounting, which apparently was not successful. Charles Berminster Munro is said to have been the treasurer and cashier of the Long Beach National Bank, two or three years ago; he is now in the mortgage-loan business. James C. Lipsey is a real estate man connected with A. W. Hyde and Company, real estate brokers. Incidentally, the headquarters of the International Health Institute are, apparently, nothing more pretentious than a small office in the suite used by the Hyde real estate concern. J. W. Proctor is another man connected with the Hyde company.

It is further reported that either the institute, or some of the men connected with it, are pushing two so-called health appliances, one of the "internal bath" type, and an electrical appliance for the alleged treatment of prostatic troubles.

So much for the individuals who are really behind the International Health Institute. The concern at the present time is also featuring on its stationery the names of twenty-three physicians and one dentist, who are said to be "Members of Advisory and Hygiene Reference Board." The list, as it appears, is:

GORDON L. MCCLELLAN, M.D., President, Board of Health, San Leandro, Calif.
C. W. GODDARD, M.D., Director Public Health and Welfare, Austin, Texas.
J. W. WALKER, M.D., Secretary-Treasurer, State Medical Board of Arkansas Medical Society.
IRA C. BALLARD, M.D., Ex-Mayor and Alderman, Gadsden, Ala.
M. A. KINSELLA, M.D., Vice President, New Britain Medical Association, Conn.
J. A. SIMPSON, M.D., Vice President, Webb County Medical Association, Texas.
CHARLES M. BISBEE, M.D., Former Vice President and Director, Rumford National Bank, Maine.
WILLIAM C. POWELL, M.D., Secretary, Dinwiddie County Medical Society and Petersburg Medical Faculty, Virginia.
EUGENE MCGUIRE, D.M.D., Secretary, Board of Dental Examiners, Arizona.
J. SEVERY HIBBEN, M.D., Chief of Staff, Women's Hospital, Pasadena, Calif.
R. W. URIE, M.D., Secretary-Treasurer, Labette County Medical Society, Kansas.

R. S. WILLIAMS, M.D.
G. R. COMBS, M.D.
R. L. MONTGOMERY, M.D.
R. B. GIBSON, M.D.
ROBERT MYLES JAMES, M.D.
GEORGE W. COX, M.D.
PERCY LEE HAMILTON, M.D.
M. M. WEBSTER, M.D.
ROBERT STARR NORTHROP, M.D.
JOHN A. KENNEY, M.D.
FRANK L. MCGILLIS, M.D.
THOMAS A. HIGGINS, M.D.
ALBERT S. HOHEB, M.D.

Returning to the promotion features: The physician who, having received an invitation to "qualify" as a resident physician, writes and applies for the job, gets a letter stating that his application has been given due consideration, and the officers and directors have accepted it and selected him as a "resident physician" for his community. The letter then states that the officers and directors of the institute, believing that the physician would like to increase his income, "as well as enjoy ethical publicity and additional prestige" in his community, extend certain opportunities, to wit:

"The Officers and Directors have deemed it advisable to set aside a block of 2,000 shares of the Capital Stock of the International Health Institute, Inc., for distribution among our Resident Physicians, Members of the Advisory and Hygiene Reference Board and Staff Lecturers. Of this amount 20 shares have been allotted you for subscription at $10 a share (par value). At this time you can subscribe for this amount and no more. Everything is explained in our little pamphlet, 'Dividends in Health,' enclosed."

The pamphlet, "Dividends in Health," has for its subtitle: "A Strictly Ethical Way to Increase Your Income—Through the 'Better Health Movement.'" The opening paragraph emphasizes the financial possibilities due to the awakening interest on the part of the public in periodic health examinations, and states that the first source of income is the service that is to be recommended by the International Health Institute in selling to the public a periodic physical examination and urinalysis, for which the institute will charge $37.50. But, the pamphlet goes on to explain, the greater opportunities for financial betterment will come from the activities of the International Health Institute in recommending to the lay subscribers that they use certain health foods to be marketed by the institute; that they use certain "approved exercising devices" to be marketed by the institute; that they use certain "hygienic appliances" to be marketed by the institute, and that they purchase certain health books to be published by the institute. Thus:

"Our carefully planned, powerfully written, forceful advertising in appropriate mediums should bring us annually THOUSANDS OF SUBSCRIBERS, each paying $37.50 for the yearly service. Each patron will

then be vigorously followed up to avail themselves of the additional Health-Sales Features of the Institute—WHICH MEANS FOUR EXTRA SOURCES OF INCOME TO THIS ORGANIZATION, each highly profitable."

Then follows the usual peroration common to the commercial prospectus. The physician is urged to get in on the ground floor, and is warned that just as soon as the allotted 2,000 shares of stock are sold, the subscription books will close immediately. Sign on the dotted line!

Summed up, then, the International Health Institute seems to be an organization whose moving spirit is a man that, so far as we have been able to discover, has made no outstanding success of any previous business; it is supported by three other men who are in the bond and real estate business. These men, with no apparent qualifications for conducting a nation wide campaign of health, come to the medical profession with a request for money to carry on their scheme. Even though the International Health Institute may be conceived in good faith, there is nothing about it, from a commercial standpoint, to justify the belief that money furnished by the medical profession will be soundly invested. From the standpoint of public policy, there is everything against it. Periodic health examinations should be made not by "institutes" conducted by laymen, but by the family physician, to whom the patient will be a human being and not a number.

Correspondence

SHALL CONGRESS HAVE POWER OF LIFE AND DEATH OVER THE SICK?

To the Editor:—The Supreme Court has decided by a majority of 5 to 4, in the case of *Lambert* v. *Yellowley*, that Congress has power to limit the amount of whisky which a physician may prescribe for a patient to one pint in ten days, irrespective of the patient's condition or the physician's opinion as to the patient's needs.

Previously the Supreme Court had decided by unanimous opinion, in the case of *Everard's Breweries* v. *Day*, that Congress has power to declare that malt liquors are without therapeutic value and may not be used as remedial agents by physicians.

Under these decisions Congress becomes both pharmacologist and physician; Congress has power to decide what is and what is not medicine; Congress may fix by legislative fiat the dosage of remedies contained in the United States Pharmacopeia. And under these decisions, Congress may penalize any physician who dares to oppose his trained judgment to the fiat of Congress, by forbidding him to use whisky and wines in his practice for a year, and by fine or imprisonment or both.

Not even the Middle Ages may boast of a greater triumph of legislative imperialism over the methods and achievements of science.

Congress included medical restrictions in the Volstead Act in contravention of a promise to the nation by the Senate Judiciary Committee that the use of alcohol as a medicine would not be interfered with.

In the report of this committee, dated June 11, 1917, it is stated that:

> National law . . . could prohibit transportation and sale . . . [and] could soon put an end to the traffic in alcohol . . . Alcohol would still be manufactured, distributed and sold under the restrictions appertaining to other poisons; and its use as a medicine and in the arts would not be interfered with.

Judge Knox of the District Court, before whom the case of *Lambert* v. *Yellowley* was first argued, comments on the broken promise in the following terms:

> I have little or no doubt that it was the impelling force and reasonableness of the thought expressed by the foregoing quotation that brought about the submission of the amendment to the several states, and was responsible for its ratification by forty-five of them.

In the minority opinion (concurred in by Mr. Justice McReynolds, Mr. Justice Butler and Mr. Justice Stone), Mr. Justice Sutherland, citing the case of *Linder* v. *United States*, in which the Supreme Court decided that "direct control of medical practice in the states is beyond the power of the federal government," concludes that "Congress, therefore, cannot directly restrict the professional judgment of the physician or interfere with its free exercise in the treatment of disease. Whatever power exists in that respect belongs to the states exclusively."

Mr. Justice Sutherland also says:

> If Congress cannot altogether prohibit the prescription [of alcohol] for medical use, it cannot limit the prescription to an inadequate quantity, for, obviously, in that case, to the extent of the inadequacy, the prohibition is as complete, and the usurpation of power as clear, as though the prohibition were unqualified. If the power exists to limit the quantity to a pint in ten days, it exists to limit the quantity to a tablespoonful or a teaspoonful or a few drops during the same or any other arbitrary period of time. . . .
>
> I do not doubt the authority of Congress to regulate the disposal of intoxicating liquors for medical use so as to prevent evasions of the law against traffic in such liquors for beverage purposes, . . . but as the record now stands it cannot prohibit the legitimate prescription of spirituous and vinous liquors for medicine as this statute [the Volstead Act] attempts to do.
>
> By the legislation now under review, the authority of Congress is so exercised that the reserved power of the states to control the practice of medicine is directly invaded, to the illegitimate end that the prescription and use of liquors for medical purposes is prohibited.

There are features, too, of the majority opinion of the Supreme Court which it is difficult to reconcile with the facts:

That Mr. Justice Brandeis, in writing the opinion, is in error as to the attitude of the American Medical Association toward the medical restrictions of the Volstead Act is clearly pointed out by Mr. Justice Sutherland as follows:

> The American Medical Association, whose resolution of 1917 is referred to, have filed in this case a brief as *amicus curiae*, challenging the conclusion which is drawn from that resolution and vigorously attacking the act now under review as arbitrary and unreasonable. In 1924 the House of Delegates of the Association adopted a resolution expressing its disapproval of those portions of the act "which interfere with the proper relation between the physician and his patient in prescribing alcohol medicinally."

That Mr. Justice Brandeis has not clearly presented the available data respecting the opinion of the medical profession on the therapeutic value of alcohol appears from the comment of Mr. Justice Sutherland:

> It is now said by the majority [of the court], at one point, that the preponderating opinion of practicing physicians is against the use of all three [spirituous, vinous and malt liquors] and, at another point, that only a minor fraction hold the other view. I am quite unable to assent to these generalizations. On the contrary, the impossibility of determining from anything now before this court, what is the preponderating opinion upon this subject, is very clear.

With respect to the court's sustaining the constitutionality of the action of Congress in declaring malt liquors to be without therapeutic value, Mr. Justice Sutherland says:

> The majority opinion rests chiefly upon *Everard's Breweries* v. *Day*, which, it is said, was decided by a unanimous court and, if adhered to, disposes of the present case. While, of course, in the light of the present ruling, I cannot say that, if the court had entertained that view of the scope of its decision at the time of its rendition, it would not have been rendered; I do say it is very certain that it would not have been a unanimous court. . . . The decision rests upon the ground that Congress, upon conflicting evidence, had determined that malt liquors possessed no substantial medicinal value and judicial inquiry upon that question was, therefore, foreclosed.

The fact that Congress has arrogated to itself the functions of the medical profession and the pharmacologist in the enabling acts for the enforcement of the Eighteenth Amendment and that the Supreme Court has sustained Congress in the usurpation of these functions holds a serious threat to the public health.

No one is able to foresee to what extremes of restrictive legislation Congress may be driven by uplifters, professional reformers, cultists and fanatics, once they gain the power, or what drug or therapeutic procedure, professional privilege or constitutional right may fall under the ban.

This is not the place to discuss the therapeutics of alcohol. It may be stated, however, that the collective answers of 31,115 physicians from all parts of the country in the Referendum on Alcohol, conducted by the American Medical Association, will not permit any authority to declare that whisky and wines and malt liquors do not possess therapeutic value.

But alcohol has been merely the occasion of the usurpation of these powers by Congress. At some future time Congress may decree, under the lash of a fanatical supergovernment, that smallpox vaccine is "putrid pus from diseased cows" and forbid physicians to inoculate people with it. Or Congress may decide, at the dictation of a fanatical supergovernment, that rabies exists only in the minds of designing physicians and imaginative persons—and dogs (lyssophobia). Congress may declare, at the dictation of a fanatical supergovernment, that the people are abusing coffee and tea and must be saved from themselves and to that end the doctors may not prescribe caffeine for themselves or prescribe it for their patients in amounts exceeding those permitted in a new Volstead Act. To show that these forecasts are not extravagant, it is only necessary to recall that California rescinded the mandatory clauses of the law respecting vaccination against smallpox and that immediately the disease increased to an alarming extent; and to call attention to the fact that there are four bills pending in various states calculated to cripple public health administration by making vaccination optional. The American Association for Medical Progress says in a recent circular letter, "Of the bills designed to regulate the practice of the healing art there are about twenty which, if passed, would place the 'opinions' of untrained men and women on a par with the findings of impartial research."

The assumption by Congress, on the plea of enforcing the Eighteenth Amendment, of autocratic power of life and death over the sick, could not be allowed to pass unchallenged. The citizenry of the country—who, after all, are the real victims of such legislation—did not, and apparently do not yet, understand the true significance of the restrictions imposed by Congress on the medical profession. And it was left for the medical profession to challenge, in the interest of public health, the constitutionality of those portions of the prohibition acts which substitute the fiat of Congress for the judgment of the skilled physician in the treatment of the sick.

The medical restrictions of the prohibition acts must be repealed both in the interest of public health and to vindicate the good name of the medical profession. Not content with usurping the functions of the physician, Congress has charged the profession with wholesale corruption. Every paragraph in the prohibition acts relating to the prescription of alcohol is based on the assumption that no physician may be trusted not to divert alcohol from medical to beverage use. The same attitude toward the profession is manifest in the briefs of government counsel in the several courts before which the suit of *Lambert* v. *Yellowley* was heard and in the prevailing opinion of the Supreme Court in which Mr. Justice Brandeis remarks, "that among those who prescribe them [alcoholic liquors] there are some who are disposed to give prescriptions where the real purpose is to divert the liquor to beverage uses" and that "Congress has said that they [alcoholic liquors] shall not be prescribed in larger quantities . . . because this would be attended with too much risk of the diversion of the liquor to beverage uses." And this in the face of the estimate of District Attorney Buckner that some 60,000,000 gallons of industrial alcohol a year are diverted to beverage use!

Under the specious plea of saving the people from drunkenness, the aged and the sick must be allowed to suffer, and perhaps to die, lest some liquor finds its way from an occasional unscrupulous doctor to thirsty throats!

As has already been stated, the suit of *Lambert* v. *Yellowley* was lost before the Supreme Court. A rehearing was denied. Relief may no longer be sought in the courts.

But the work of the medical profession is not done. The attack on the insidious propaganda of the "antis" will be successful only when the individual members of the profession awaken to a realization of their responsibilities and instruct their representatives in county, state and national organizations to keep watch for, and to attack, every attempt, through federal or state legislation, to stay the march of medical progress, to hamper public health administration and to regulate the use and the dosage of accepted remedies. Only then will it be possible to restore to the physician the right to exercise his trained judgment in the relief of suffering, the saving of life and the prevention of disease.

The physician alone is able to foresee the evils of restrictive medical legislation. And it is through him that the people must be brought to understand the true meaning of statutes which fetter the physician in the application of approved therapeutic procedures—their menace to health and even to life itself.

Once the people realize that Congress, in the Volstead Act, has arrogated to itself the functions of the physician, the question

Shall Congress Have Power of Life and Death Over the Sick?

will be answered at the polls instead of in the courts.

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T. C. CHALMERS, M.D. N. B. VAN ETTEN, M.D.
CHARLES L. DANA, M.D. WARREN COLEMAN, M.D.
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New York.

LEUKOPLAKIA

To the Editor:—In THE JOURNAL, April 9, p. 1142, in an interesting paper on oral lesions, Bloodgood says that "leukoplakia, or white patches in the mouth, is caused by tobacco and tobacco only."

In many instances, syphilis causes both leukoplakia and leukokeratosis in nonsmokers.

In the greater part of Africa, in Asia and in the Far East, leukoplakia and leukokeratosis are caused by the habit of keeping in the buccal cavity a bolus composed of betel-nut, lime and a leaf.

Leukoplakia of the introitus vaginae is probably caused by irritating secretions.

Figure 5, marked geographic tongue, represents an instance of "glossite lozangique médiane." So-called geographic tongue is a fugacious lesion, of which the synonyms are transitory benign plaques of the tongue, and erythema migrans linguae.

FRED WISE, M.D., New York.

HIGH BLOOD SUGAR WITHOUT GLYCOSURIA

To the Editor:—A correspondent (THE JOURNAL, January 8, p. 121) inquires about the significance of high blood sugar without glycosuria. The reply seems conservative if not informative. These cases are not infrequent, and they are more often in the older diabetic patients and the cases associated with nephritis and hypertension. A recent patient of mine had supposed her condition satisfactory from the fact that the urine, which formerly contained sugar, had been sugar free the past two years. Her fasting blood sugar was over 200, and she was confined to bed with so-called rheumatic aches and pains and stiffness for six months. Her carbohydrates were reduced to 100 Gm. but without effect

on the blood sugar or the clinical condition. Insulin was then given up to 20 units three times a day until her blood sugar was driven down to 100 fasting. Since then her aches and pains have gone and she again walks in peace. I feel that the blood is the real index, and with two good weapons on hand it is best to keep the blood sugar where it belongs—always under 160.

ARTHUR H. TERRY, JR., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PREGNANCY WITH MÉNIÈRE SYNDROME

To the Editor:—What effect has pregnancy in a Ménière syndrome case? How long does a Ménière patient live? I wonder whether there is anything regarding these questions in literature.

G. J. KERTESZ, M.D., Pine River, Minn.

ANSWER.—As far as is known, no case of Ménière's disease complicating pregnancy has been recorded; hence, it is difficult to know what effect pregnancy will have on patients with Ménière's disease. Regarding the prognosis, Osler says: "The outlook in Ménière's disease is uncertain. While many cases recover completely, in others deafness results and the attacks recur at shorter intervals. In aggravated cases the patient constantly suffers from vertigo and may even be confined to bed."

FUMES OF ALCOHOL—TREATMENT OF "BLACK EYE"

To the Editor:—1. Please let me have your opinion as to the possibility of injurious fumes resulting from the use of "denatured alcohol" and from "pure wood alcohol" in generating the heat for the croup kettle. 2. What is the therapeutic and cosmetic treatment for "black eye"? I am particularly interested in any suggestions you have to offer for concealing the ecchymosis for persons who have to be seen in public.

GORDON F. HELSLEY, M.D., San Francisco, Calif.

ANSWER.—1. The more efficient the combustion of the fuel in "alcohol" lamps, the less the danger of deleterious effects. While there is possibility of danger from the fumes on a lamp employing methyl alcohol as such or denatured, in our opinion it is not great if there is sufficient ventilation and the patient is protected from the direct fumes. The ideal heater, if possible, is the electric hot plate. As pure wood alcohol contains approximately ten times as much methyl alcohol as does denatured alcohol, the possibility of a greater proportion of toxic fumes in unburned vapors arising from a lamp using methyl alcohol is obvious.

2. A specific treatment for "black eye" is not known. Hot applications may hasten the absorption of the ecchymosis. The condition can be partially concealed by ordinary cosmetics, calamine lotion, or a stain of the following composition: fluidextract of walnut (juglans), 1 part; 5 per cent solution of carmine in aromatic spirit of ammonia, 2 parts, and alcohol, 7 parts.

"IODEX" IN THYROID DISTURBANCES

To the Editor:—Enclosed please find marked copy of "Thyroid Disturbances: Their Medical Treatment." It is very evident that the Iodex Company wishes to sell the product at the expense of activating adenomatous cases at least. Do you not think it justifiable officially to call this action by its full name? Further, have not the authors quoted in "Bibliography" a cause for action?

S. D. VAN METER, M.D., Denver.

ANSWER.—The pamphlet enclosed by Dr. Van Meter is published by the Pharmacal Advance Press, the house organ of Menley and James, Ltd., the firm that sells Iodex. It is devoted to promoting the use of iodex ointment in the treatment of systemic goiter by rubbing ointment into the skin over the thyroid gland twice a day, and also recommending iodex ointment for a number of other pathologic conditions. It concludes with a number of testimonials.

Iodex was discussed by the Council on Pharmacy and Chemistry of the American Medical Association in THE JOURNAL, May 3, 1919, p. 1315. At that time the Council pointed out that the preparation is practically devoid of free iodine, that its composition was incorrectly stated, that the total iodine content is only about three fifths of the total amount of iodine claimed, and that therefore its use for securing iodine effects is unwarranted.

Almost any intelligent physician knows that the attempt to treat systemic goiter by rubbing such an ointment into the skin over the goiter is preposterous. However, this is but one of many ridiculous statements in the pamphlet mentioned.

The pamphlet is introduced with a bibliography of authorities consulted in the compilation of the brochure, yet many of the statements in the pamphlet are contradicted by the authorities referred to. One is inclined to wonder how many physicians accept the statements made in such obviously fallacious advertising at their face value.

MANGANESE BUTYRATE IN FURUNCULOSIS—SODIUM CITRATE AND BLOOD COAGULATION—URISEPTIN

To the Editor:—1. Manganese butyrate is being used by some as a treatment for furunculosis. The drug is given intramuscularly. Is there any known basis for such use? 2. Intramuscular injections of sodium citrate have been given to patients with a prolonged coagulation time, with the claim that a prompt and striking drop in the time occurs. This sounds paradoxical to me. Will you comment on it? 3. What is uriseptin, being used in preference to urotropin by some? Is the basis of its action different from that of urotropin? Please omit name.

M.D., Chicago.

ANSWER.—1. In Queries and Minor Notes (THE JOURNAL, Nov. 27, 1926, p. 1849), it was pointed out that there does not appear to be any good evidence in favor of the use of manganese butyrate in furunculosis.

2. "A Manual of Pharmacology" by Torald Sollmann (ed. 3, p. 943) states that the intravenous injection of sodium citrate in hemophilia "produces an immediate and marked shortening of the coagulation time. This is followed in one to two days by return to the original, or even by a slower coagulation. Intramuscular injection has no effect (Ottenberg, 1916)."

3. In 1908, THE JOURNAL (August 29, p. 773) published the report of an examination of uriseptin made in the A. M. A Chemical Laboratory. The report brought out that while uriseptin was claimed to contain formaldehyde combined with lithium in the presence of a concentrated extract of corn silk and couch grass, the examination showed that uriseptin was marketed under a deliberately false claim, in that it did not contain the lithium formaldehyde compound, but instead contained hexamethylenamine (methenamine) as its chief constituent, and also lithium benzoate. This report is reprinted in the Propaganda for Reform in Proprietary Medicines, volume 1.

SILVER NITRATE IN GASTRIC ULCER

To the Editor:—What is the present status of treatment of gastric ulcer with silver nitrate? What is the proper dosage and method of administration?

E. B. MACON, M.D., Washington, D. C.

ANSWER.—Silver nitrate is not in vogue as much at present as it once was and as it probably should be. It has two effects in gastric ulcer: first, a possibly direct healing action on the ulcer as obtained from the application of astringents to ulcers elsewhere; and, second, a lessening of the gastric hyperesthesia, which complicates the ulcer and is responsible for most of the symptoms as well as interfering with the healing of the ulcer. An additional protective action has been suggested, that of stimulating the secretion of gastric mucus, which has been proved to occur in dogs after application of 10 per cent silver nitrate solution.

The following technic is recommended: The stomach tube is passed, preferably in the morning before breakfast, and the stomach is emptied of its contents. Then, after a brief preliminary washing with a weak alkaline solution (1 teaspoonful of sodium bicarbonate to 1 liter of warm water) about 300 cc. of 1:5,000 solution of silver nitrate is introduced into the stomach, evacuated after from a few seconds to one minute, and followed by washing with the alkaline solution, which is less likely to irritate the stomach than the

sodium chloride solution usually recommended for the purpose.

This treatment is repeated daily, the strength of the solution being gradually increased to 1:1,000. When improvement has become established, the treatments are given on alternate days and finally once a week, the symptoms of the patient being the best guide for regulating the frequency and duration of the treatment. For stubborn or recurrent cases, when the appearance of argyria is feared, zinc sulphate, in the same strength, may be substituted for the silver nitrate. When the stomach tube cannot be passed, the silver nitrate may be given by mouth in tablespoonful doses of a 1:500 solution, three times daily before meals. This treatment cannot, however, be continued for a very long time because of danger of argyria, which is less with lavage, as the excess of silver is promptly removed.

ANTIDOTE FOR MERCURIC CHLORIDE — COAL-OIL POISONING

To the Editor:—1. What phosphite is used as an antidote for mercuric chloride? In THE JOURNAL, February 26, page 623, is an article on that subject and it speaks of the phosphite antidote. Did Bernard Fantus speak of it in his articles in THE JOURNAL last year; if so, what one? 2. I lost a case of coal-oil poisoning. Is there any antidote for that? Can you give me light on the subject? I have not been able to find anything on the treatment for coal-oil poisoning. I have had three cases and lost two. Please omit name.

M.D., Missouri.

ANSWER.—1. The experiments referred to were published in the *Journal of Laboratory and Clinical Medicine*, Oct. 14, 1916. The antidote consists of sodium phosphite, 1 Gm., and sodium acetate, 0.66 Gm. If this is not available, the following solution may be used: sodium hypophosphite, 1 Gm.; solution of hydrogen peroxide, 2.5 cc.; water, 10 cc. Ten times as much phosphite or hypophosphite as poison is given, if the amount of poison is known. One of the most recent periodical references to the treatment of mercuric chloride poisoning, including the use of sodium hypophosphite, is the following: "Eggs and Milk as Antidotes Against Mercuric Chloride," *J. Am. Pharm. A.*, March, 1927, p. 198.

2. Unfortunately, there is no known antidote against coal-oil poisoning. The promptest possible evacuation and energetic symptomatic treatment are therefore all the more required.

BOOKS ON THE CARE OF THE BABY

To the Editor:—Please give me a list of books and publications written by pediatricians for the use of the mother. The type of book I mean is Kerley's "Short Talks with Young Mothers" and Holt's "Care and Feeding of Infants." Please delete name.

M.D., Pennsylvania.

ANSWER.—The list that follows represents only a portion of all the books that are available. This is one field of public health education, above all others, in which some standardization is needed, and in which much money could be saved by agreement on what constitutes proper material.

Abbott, G.: Federal Aid for the Protection of Maternity and Infancy, U. S. Children's Bureau, Supt. of Documents, 1922, 5 cents.
American Child Hygiene Association: Care of the Baby, U. S. Public Health, Supt. of Documents, 1917, 5 cents.
American Child Health Association: Expectant Mother in the House of Health, 370 Seventh Avenue, New York, 1924, 10 cents.
Baily, A. W.: Babe in Your Arms, Philadelphia, Dorrance & Co., 1922, $1.
Bailey, E. H.: Prenatal Epoch, Philadelphia, David McKay, $3.
Baker, S. J.: Healthy Babies, Federal Publishing Company, 1921, $3.
Baker, S. J.: Healthy Babies, Boston, Little, Brown & Co., 1923, $1.25.
Baker, S. J.: Healthy Children, Boston, Little, Brown & Co., 1923.
Baker, S. J.: Your Baby: How to Keep It Well, California State Board of Health, Sacramento, 1919.
Ballantyne: Expectant Motherhood, New York, Funk and Wagnalls Company.
Bandler, S. W.: Expectant Mother, Philadelphia, W. B. Saunders Company, 1926, $2.
Belle, Aunt: Aunt Belle's Baby Book, Mennen Company, 1921, $1.50.
Bloom, C. J.: Care and Feeding of Babies in Warm Climates, the author, 1922, $2.
Bocker, D.: Mother's Manual, New York, Brentano's, 1925, $2.
Bolt, R.: A Baby's Health, New York, Funk and Wagnalls Company, 1924, 30 cents.
Brodhead, G. L.: Approaching Motherhood, New York, Paul B. Hoeber, 1925, $1.25.
Cameron, H. C.: Nervous Child, New York, Oxford University Press, 1919, $2.40.
Clary, A.: Queen of Hearts: Mother, Roxburgh, 1921, $1.35.
Coolidge, H.: Mothers' Might and How to Use It, E. Towne, 1919, $2.
Davis, E. P.: Mother and Child, Philadelphia, J. B. Lippincott Company, 1921, $2.75.
Dennett, R. H.: Healthy Baby, ed. 2, New York, Macmillan Company, 1922, $1.25.
De Normandie, R. L.: Expectant Mother (National Health Series), New York, Funk and Wagnalls Company.
De Vos, C.: Words of Wisdom for Expectant Mothers, the author, 1924, $1.
Dickinson, M. B.: Children Well and Happy, LeRoy Phillips, 1918, 60 cents.
Du Bois, C. C.: Bringing up the Baby, the author, Warsaw, Ind., 1925, $1.
Eldred, M. M., and Le Cron, H. C.: For the Young Mother, Reilly & Lee, 1921, $1.50.
Eve, E.: Manual for Health Visitors and Infant Welfare Workers, New York, William Wood & Co., 1921, $3.
Feldman, W. M.: Jewish Child, Bloch, 1917, $4.
Fischer, L.: Health-Care of the Baby, Literary Digest Parents' League Series, 85 cents.
Fischer, L.: Health-Care of the Baby, ed. 13, New York, Funk and Wagnalls Company, 1922, $1.
Galland, W. H.: Maternity and Child Care, F. J. Drake, 1920, $1.50.
Galland, W. H.: Maternity and Child Care, L. E. Myers & Co., 1920, $1.60.
Galland, W. H.: Proper Feeding of Infants, F. J. Drake, 1920, $1.50.
Griel, C. L.: El bebé, Woman's Press, 1920.
Griffith, J. P. C.: Care of the Baby, ed. 7, Philadelphia, W. B. Saunders Company, 1923, $2.50.
Halsted, H.: Prenatal Care and the Baby's Birth, in Child Health Library, New York, Robert K. Haas, 1924, $3.
Hedger, C.: Well Baby Primer, Elizabeth McCormick Memorial Fund, 1919, 15 cents.
Hirshberg, L. K.: What You Ought to Know About the Baby, Health Service Publishing Company, 1926, $3.
Holt, L. E., editor: The Happy Baby, New York, Dodd, Mead & Co., 1924.
Holt, L. E.: Care and Feeding of Children, ed. 8, New York, D. Appleton & Co., 1915.
Illinois Department of Public Health: Our Babies, Springfield, 1919.
Indiana State Board of Health: Indiana Mothers' Baby Book, Indianapolis, 1920.
Kerley, C. G.: What Every Mother Should Know About Her Infants and Young Children, New York, Paul B. Hoeber, 1924, 50 cents.
Kerr, L.: Baby: Its Care and Development, Burt, 1921, $1.25.
Keyes, H. J.: Friendly Baby, McCall's Magazine, 1923, 10 cents.
Keyes, H.: Friendly Mother, McCall's Magazine, service editor, 1922, 10 cents.
Knox, J. H. M.: Talks to Mothers About Their Babies, Maryland State Department of Health, 1923.
Lyman, G. D.: Care and Feeding of the Infant, Robertson, 1922, $1.25.
Macfadden, B. A.: Physical Culture for Baby, Macfadden, 1924, $2.
Machard, R.: Child is Born, Cosmopolitan Book Company, 1926, $2.
Maryland Bureau of Child Hygiene: Talks to Mothers About Their Babies, Baltimore, 1924.
Morgan, M. P.: Outline of Course on Infant Care for Use in Little Mothers' Classes, Wisconsin Board of Health, 1922.
Morris, J., and Adems, St. C.: Mother's Baby Book, New York, George Sully & Co., $1.50.
Morse, J. L., and others: Infant and Young Child, Philadelphia, W. B. Saunders Company, 1923, $1.75.
Oliphant, H. N.: Maternity and the Care of the Babe, the author, 1922, $2.
Olsen, R. S.: Problems of Parenthood, University of Utah, 1919.
Paddock, C. E.: Maternitas, Chicago, C. H. Head & Co., 1920, $1.50.
Pease, M. C.: Feeding and Caring for the Baby, Sears, 50 cents.
Porter, C.: Future Citizen and His Mother, Boston, Houghton, Mifflin Company, 1919, $1.50.
Ramsey, W. R.: Infancy and Childhood, New York, E. P. Dutton & Co., 1918, $1.25.
Read, M. L.: The Mothercraft Manual, Boston, Little, Brown & Co., 1923.
Richardson, A. E., and Rich, J. P.: Food for Infants and Growing Children, University of Texas, 1918.
Richardson, F. H.: Simplifying Motherhood, New York, G. P. Putnam's Sons, 1925, $1.75.
Sadler, L. C.: How to Feed the Baby, Chicago, A. C. McClurg & Co., 1925, $2.
Sauer, L. W.: Nursery Guide for Mothers and Children's Nurses, St. Louis, C. V. Mosby Company, 1923, $1.75.
Sauer, L. W.: Nursery Guide for Mothers and Nurses, ed. 2, St. Louis, C. V. Mosby Company, 1926, $2.
Scharlieb, M. A. D.: Welfare of the Expectant Mother, New York, Funk and Wagnalls Company, 1920, $1.50.
Schroeder, L. C.: Babies: Their Feeding and Care, in Child Health Library, volume 2, New York, Robert K. Haas, 1924, $3.
Scurfield, H.: Infant and Young Child Welfare, New York, Funk and Wagnalls Company, 1920, $1.50.
Slemons, J. M.: Prospective Mother, New York, D. Appleton & Co., 1921, $2.
Smith, R. M.: From Infancy to Childhood, Boston, Little, Brown & Co., 1925.
Smith, R. M., and Green, R.: Baby's First Two Years, Boston, Houghton, Mifflin Company, 1924, $1.75.
Steele, G.: Maternity and Infant Care in a Mountain County in Georgia, U. S. Children's Bureau, Superintendent of Documents, 1923, 15 cents.
Stopes, M. C. C.: Radiant Motherhood, New York, G. P. Putnam's Sons, 1921, $2.50.
United States Public Health Service: Breast Feeding Her Baby, 1919.
Van Blarcom, C. C.: Getting Ready to Be a Mother, New York, Macmillan Company, 1922.
Watson, Mrs. Max: Lessons on the Care of Infants, New York, Longmans, Green & Co., 1923, 20 cents.
West, M.: Infant Care, U. S. Children's Bureau, Superintendent of Documents, 1922, 10 cents.
West, Mrs. Max: Prenatal Care, U. S. Department of Labor, Children's Bureau, 1921.
Wickham, E. H.: Maternity Nursing in a Nutshell, Philadelphia, F. A. Davis Company, 1924, $1.50.
Wilson, O. H.: Care and Feeding of Southern Babies, Baird-Ward, 1920, $1.25.
Wilson, O. H.: Care and Feeding of Southern Babies, ed. 2, Cokesburg Press, 1926, $1.25.
Winslow, C. E.: A Public Health Nurse: How She Helps to Keep the Babies Well, U. S. Children's Bureau, 1918.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Washington, D. C., May 17. Sec., Dr. William H. Wilder, 122 So. Michigan Blvd. Chicago.

ARKANSAS: Regular Board, Little Rock, May 10-11. Sec., Dr. J. W. Walker, Fayetteville. Homeopathic Board: Little Rock, May 10. Sec., Dr. Allison A. Pringle, Eureka Springs.

CALIFORNIA: Los Angeles, May 16-19. Sec., Dr. Charles B. Pinkham, 908 Forum Bldg., Sacramento.

CONNECTICUT: State Board of Healing Arts, New Haven, June 4. Prerequisite to examination. Sec., Dr. Edwin C. M. Hall, 82 Grand Avenue, New Haven.

DELAWARE: Wilmington, June 21-23. State Society and Homeopathic. Pres., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

GEORGIA: Atlanta and Augusta, June 8-10. Sec., Dr. J. W. Palmer, Ailey.

INDIANA: Indianapolis, June 21-23. Sec., Dr. E. M. Shanklin, 421 State House, Indianapolis.

IOWA: Iowa City, June 7-9. Director of Exams. and Licensure, Mr. H. W. Grefe, Des Moines.

KANSAS: Topeka, June 21. Sec., Dr. A. S. Ross, Sabetha.

KENTUCKY: Louisville, June 21-23. Sec., Dr. A. T. McCormack, 532 W. Main Street, Louisville.

MARYLAND: Baltimore, June 7-10. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral Street, Baltimore.

MINNESOTA: Minneapolis, June 21-23. Sec., Dr. A. E. Comstock, 636 Lowry Building, St. Paul.

MISSISSIPPI: Jackson, June 21-22. Sec., Dr. Felix J. Underwood, Jackson.

NATIONAL BOARD OF MEDICAL EXAMINERS: Part I, June 15-17. Applications should be made by May 15. Sec., Dr. John S. Rodman, 1600 Walnut Street, Philadelphia.

NEBRASKA: Omaha, June 7-9. Sec., Dr. Lincoln Frost, State House, Lincoln.

NEW JERSEY: Trenton, June 14-15. Sec., Dr. Charles B. Kelley, 28 West State Street, Trenton.

NEVADA: Carson City, May 1. Acting Sec., Dr. Edward E. Hamer, Carson City.

NORTH CAROLINA: Raleigh, June 21. Sec., Dr. John W. MacConnell, Davidson.

OHIO: Columbus, June 7-11. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

TENNESSEE: Memphis, Nashville and Knoxville, June 17-18. Sec., Dr. A. B. DeLoach, 733, Medical Arts Bldg., Memphis.

VIRGINIA: Richmond, June 15-18. Sec., Dr. J. W. Preston, Box 444, Richmond.

WYOMING: Cheyenne, June 1-2. Sec., Dr. G. M. Anderson, Cheyenne.

Arizona January Examination

Dr. W. O. Sweek, secretary of the Arizona Board of Medical Examiners, reports the written examination held at Phoenix, Jan. 4-5, 1927. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 4 candidates examined, 3 passed and 1 failed. Six candidates were licensed by reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
University of Illinois College of Medicine	(1913)	88.6
University of Louisville School of Medicine	(1925)	92.6
Vanderbilt University School of Medicine	(1926)	81.5

FAILED		
College	Year Grad.	Per Cent
University of West Tennessee Coll. of Med. and Surg.	(1918)	45.5

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
St. Louis University School of Medicine	(1914)	Missouri
Starling-Ohio Medical College, Columbus	(1912)	Ohio
University of Nashville Medical Department	(1907)	Tennessee
Vanderbilt University School of Medicine	(1923)	Tennessee
McGill University Faculty of Medicine	(1896)	Illinois
School of Liberal Homeopathic Medicine, Santa Lucia	(1919)*	Mexico

* Verification of graduation in process.

Oregon 1926 Reciprocity Report

Dr. Marshall K. Hall, secretary of the Oregon State Board of Medical Examiners, reports that 8 candidates were licensed by reciprocity from July, 1926, to January, 1927. The following colleges were represented:

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
University of California Medical School	(1926)	California
Rush Medical College	(1919)	Utah
State University of Iowa College of Medicine	(1901)	Iowa
University of Michigan Medical School	(1916)	Michigan
St. Louis University School of Medicine	(1908)	Idaho
Washington University School of Medicine	(1894)	N. Dakota
Jefferson Medical College of Philadelphia	(1924)	Penna.
Trinity Medical College	(1880)	Washington

Book Notices

RECENT ADVANCES IN PHYSIOLOGY. By C. Lovatt Evans, D.Sc., M.R.C.S., L.R.C.P., Jodrell Professor of Physiology, University College, London. Second edition. Cloth. Price, $3.50. Pp. 370, with 70 illustrations. Philadelphia: P. Blakiston's Son & Company, 1926.

As indicated in the preface, this book aims "to present to the student who has worked through an ordinary textbook an account of some of the problems with which physiologists have been concerned during recent years," and thus serve to pass the student "more easily into the original literature of those subjects." The book consists of fourteen chapters, the first five of which deal with the physiology of blood morphologically (blood cells) and chemically considered (carbon dioxide carrying power and its reaction). The short, authoritative chapters on the capillary circulation, the physical and chemical aspects of muscular contraction, the mechanisms of postural reflexes and the functions of the labyrinth and the conditioned reflexes are particularly pleasing. Other chapters deal with the output and work of the heart, the mechanism of tissue oxidations, and the active principles of the thyroid, hypophysis and pancreas. The author has performed an admirable task in the compilation and critical analysis of the chosen topics, not only for graduate students, but for mature physiologists and physicians as well. A bibliography is appended to each chapter. It is little wonder that a revised second edition followed so quickly after the first appearance of the book.

A MANUAL OF MATERIA MEDICA FOR MEDICAL STUDENTS. By E. Quin Thornton, M.D., Assistant Professor of Materia Medica in the Jefferson Medical College, Philadelphia. Second edition. Cloth. Pp. 384. Philadelphia: Lea & Febiger, 1927.

MEDICAL FORMULARY. By E. Quin Thornton, M.D., Assistant Professor of Materia Medica in the Jefferson Medical College, Philadelphia. Twelfth edition. Cloth. Price, $2.50. Pp. 352. Philadelphia: Lea & Febiger, 1925.

The "Manual of Materia Medica" is divided into two general portions. The first, about sixty pages, contains essentially the same material in much the same form found in most larger textbooks on prescription writing, the rules of dosage, methods of administration, general types of pharmaceutic preparations, prescription Latin with long lists of Latin words most of which are practically obsolete in modern prescription writing, cumbersome lists of incompatibilities, and thirteen pages of tables of dosage copied from the U. S. Pharmacopeia. The second portion of the book is devoted to discussions of the drugs found in the U. S. Pharmacopeia, with their physical and chemical properties, incompatibilities, actions and uses, toxicology and dosage. The author states that he has adopted the plan of a "convenient and practical grouping" in arranging the text. It is indeed a question how convenient or practical it is to find for example, hydrastis on page 306 as the only substance described under hemostatics, while alumen is found on page 139 listed under the heading of "Zinc and Aluminum," or of what advantage it is to find a description of sodium salicylate under antiarthritics on page 194, and again on page 122 under the heading of "Alkalis and their Compounds," each description supplementing and overlapping the other. It is also difficult to understand what purpose is served by dividing all therapeutic agents into organic and inorganic and then dividing the organic drugs into groups according to their uses, thereby severing in the mind of the student the pharmacologic similarity between organic and inorganic substances while emphasizing the pharmacologic similarity of the organic drugs. This has led to the difficulty mentioned before, that hydrastis is the only substance described under hemostatics, while the most important local hemostatics are not even listed in the index as hemostatics.

The author says that it is of little value for medical students to know the botanic origins or the minute structure of these drugs, yet about a half of the last 270 pages is devoted to this deadly descriptive material. The other half of the last 270 pages is devoted to subject matter which the author says he has made no attempt to stress, using it merely as a

vehicle for "what might otherwise prove a dull discourse" for the second year medical student for whom the book is intended. The fact that no stress is laid on actions and uses is little excuse for compiling under these headings many disjointed, antiquated and erroneous therapeutic and pharmacologic observations. Even though the idea that the natural salicylates have an advantage over the synthetic product was overthrown about fifteen years ago the old theory is still held in this book. In a discussion of the action and uses of epinephrine, the following is found: "It is also used in cardiac failure and collapse as well as heart-block or Stokes-Adams syndrome. In these cases it acts by stimulating the vagus center and the heart muscle direct. . . . Internally it is given in solution to check hemorrhage in the stomach." In the discussion of digitalis, ideas such as these are expressed: 1. The effect of tincture of digitalis differs from that of the infusion because the isolated active principles of digitalis are not all soluble in water or alcohol, and the author makes no mention of the fact that either water or alcohol almost completely exhausts the activity of the leaf. 2. Digitalin stimulates the heart and the "vasomotor system," and the vagus nerves, while digitalein and digitoxin have only the former two actions, and digitonin is considered as modifying the action of digitalis by the fact that it is capable of depressing the heart and the vagus nerves. 3. Digitalis when taken by mouth continues to exert its influence for at least eight hours. 4. Digitalis is slowly eliminated; hence, poisoning will arise if the drug is continued unless there is an increase in the flow of urine insuring its elimination. It would serve no purpose to multiply examples of this type description. On the whole the volume has less the appearance of a book on materia medica than of a book on prescription writing to which there has been tacked on for the purpose of bulk an anthology of pharmacologic and therapeutic nonsense.

The companion volume by the same author, the "Medical Formulary," is a cross between a formulary and a handbook on therapeutics. This pocket edition of 352 pages contains tables of weights and measures, lists of incompatibilities, poisons and antidotes, rules of dosage, and tables of dosage. It lists about eight hundred drugs; some are unofficial, while others are official in the U. S. Pharmacopeia or in the pharmacopeias of foreign countries. These have been shuffled into about 2,000 prescriptions, which, it is stated in the preface, represent "the collective experience of the profession." In view of the efforts of the Council on Pharmacy and Chemistry and teachers of medicine in general in the last ten or fifteen years to reduce the number of drugs and to rationalize the use of those remedies that are employed, the publication of a book, riddled with empiricisms and fallacies popular thirty-five years ago, is a sad spectacle. Only a few examples need be cited. The extract of the preputial glands of the beaver, together with iron, quinine and zinc valerate, are found in a prescription for "anemia with nervousness." The infusion of scoparius is given for dropsy in "cardiac weakness with renal congestion." Cimicifuga is employed against "cardiac asthenia." Pulmonary edema is treated by from 10 to 20 drops of tincture of digitalis hypodermically. For auricular fibrillation, from 5 to 15 drops of tincture of digitalis is given every eight hours. Ten drops of tincture of digitalis every eight hours is prescribed in "persistent hemorrhage of parturient women." One prescription for quinine and another for tincture of ferric chloride are given "to overcome septic infection due to absorption from the carbuncle." Morphine is added to cocaine solution in a prescription for inducing local anesthesia by intradermal or subcutaneous injection. The author states his desire to discourage the use of "proprietary, secret and patented preparations"; however, his prescription containing leptandra, euonymus, extract of chirata and podophyllin for "biliousness with chronic or subacute hepatic torpor" sounds quite as bad as anything exploited by the "patent medicine" monger. Such material as this is prefaced by the statement that "a critical study has been given to each formula in all its parts and there has been a constant endeavor to summarize the best therapeutics of the day"

The "Manual of Materia Medica" and the "Medical Formulary" are not the only books of this character that have appeared in the last few years. Books that represent progress in materia medica and therapeutics as simply the addition of new remedies to the store of old ones without critical revaluation of the latter do an injustice to medical progress and do not have a place in modern medicine.

A TEXT-BOOK OF PHARMACY: For Pharmaceutical Students and Apprentices. By Arthur Owen Bentley, Ph.C., Director of the Department of Pharmacy, University College, Nottingham. With a Section on Some Biological Aspects of Pharmacy. By Henry Smith Holden, D.Sc., F.L.S., Director of the Sub-Department of Industrial Bacteriology, University College, Nottingham. Cloth. Price, 15s. net. Pp. 540, with 103 illustrations. London: Baillière, Tindall & Cox, 1926.

This book has been divided into three parts. The first, which deals with general principles and apparatus, consists of sixteen chapters. The pharmaceutic operations and many pieces of apparatus employed are described and are accompanied by illustrations. The second part, on official preparations, constitutes twenty chapters describing the preparations of the British pharmacopeia, including many explanatory comments relative to the origin and reasons for certain directions of the various articles used, which should prove valuable to students, particularly those preparing for pharmaceutic examinations. The last section deals with some biologic aspects of pharmacy, described in five chapters; namely, vaccines and serums, the preparation of vaccines, sterilization, surgical dressings, and enzymes. Appendixes are added, consisting of a section on the stabilization of drugs, a table of doses, strengths and solubilities, and a comprehensive index. The book as a whole will be of value to students of pharmacy in the United Kingdom, but will be of little value to students in the United States, as the United States Pharmacopeia X is not even mentioned.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

A TEXTBOOK OF BACTERIOLOGY. A Treatise on the Application of Bacteriology and Immunology to the Etiology, Diagnosis, Specific Therapy and Prevention of Infectious Diseases for Students and Practitioners of Medicine and Public Health. By Hans Zinsser, M.D., Professor of Bacteriology and Immunology, Harvard University Medical School. With a Section on Pathogenic Protozoa. By E. E. Tyzzer, A.M., M.D., Professor of Comparative Pathology, Harvard University Medical School. Sixth edition. Cloth. Price, $7.50. Pp. 1053, with 181 illustrations. New York: D. Appleton & Company, 1927.

New edition taking account of recent research on pneumonia, scarlet fever, etc.

DENTAL MATERIA MEDICA AND THERAPEUTICS: With Special Reference to the Rational Application of Remedial Measures to Dental Diseases. A Textbook for Students and Practitioners. By Hermann Prinz, A.M., D.D.S., M.D., Professor of Materia Medica and Therapeutics, The Thomas W. Evans Museum and Dental Institute School of Dentistry University of Pennsylvania. Sixth edition. Cloth. Price, $6. Pp. 632, with 146 illustrations. St. Louis: C. V. Mosby Company, 1926.

Guide to remedies used by dentists with special reference to anesthetics and physical agents.

HISTORY OF PROSTITUTION AMONG ALL THE PEOPLES OF THE WORLD, FROM THE MOST REMOTE ANTIQUITY TO THE PRESENT DAY. Three volumes. By Paul LaCroix, Member of Many Academies and Learned Societies French and Foreign. Translated from the original French by Samuel Putnam. Cloth. Price, $36 per set. Pp. 1749. Chicago: Pascal Covici, 1926.

Translation of romantic study with numerous arguments against conception that syphilis began in America.

A TEXTBOOK OF EXODONTIA: Exodontia, Oral Surgery and Anesthesia. By Leo Winter, D.D.S., Professor of Oral Surgery, New York University College of Dentistry. Cloth. Price, $7.50. Pp. 364, with 329 illustrations. St. Louis: C. V. Mosby Company, 1927.

Complete exposition of the art of the dental extractionist —and how!

ANATOMICAL TEXTS OF THE EARLIER MIDDLE AGES. A Study in the Transmission of Culture with a Revised Latin Text of Anatomia Cophonis and Translations of Four Texts. By George W. Corner, M.D., Professor of Anatomy in the University of Rochester. Paper. Pp. 112. Washington: Carnegie Institution of Washington, 1927.

The beginnings of anatomy elucidated in a scholarly manner.

EXOPHTHALMIC GOITRE. By John Eason, M.D., F.R.C.P.E., Physician, Royal Infirmary, Edinburgh. Cloth. Price, 12/6 net. Pp. 215, with illustrations. Edinburgh: Oliver & Boyd, 1927.

Monograph giving exhaustive study of English conceptions of this subject—more conservative than American practice.

BEHAVIORISM. By John B. Watson, Lecturer, the New School for Social Research. Cloth. Price, $3. Pp. 251. New York: W. W. Norton & Company, Inc., 1925.

Twelve popular lectures showing how and why we do what we do.

DAS PROBLEM DER MITTELOHRTUBERKULOSE. Von Dr. A. I. Cemach, Facharzt für Hals-, Nasen- und Ohrenkrankheiten in Wien. Paper. Price, 9 marks. Pp. 224, with 5 illustrations. Berlin: Urban & Schwarzenberg, 1926.

Monographic study of tuberculosis of the middle ear.

PHYSIOLOGISCHE THEORIE DER VERERBUNG. Von Professor Dr. Richard Goldschmidt, 2. Direktor des Kaiser Wilhelm-Instituts für Biologie in Berlin-Dahlem. Paper. Price, 15 marks. Pp. 247, with 59 illustrations. Berlin: Julius Springer, 1927.

A materialistic basis for human reactions.

ANLEITUNG ZUR UNTERSUCHUNG DER LEBENSMITTEL. Von J. Grossfeld, Nahrungsmittelchemiker am Untersuchungsamte in Recklinghausen. Paper. Price, 22.50 marks. Pp. 409, with 26 illustrations. Berlin: Julius Springer, 1927.

Physiologic chemistry of nutrition.

PSYCHOLOGY: What It Has to Teach You About Yourself and Your World. By Everett Dean Martin. Cloth. Price, $3. Pp. 302. New York: W. W. Norton & Company, Inc., 1924.

Twenty lectures making modern psychology understandable to the layman.

DER BARANYSCHE ZEIGEVERSUCH: Seine physiologischen Grundlagen und klinische Methodik. Von Dr. med. Ernst Wodak. Paper. Price, 3 marks. Pp. 79, with 26 illustrations. Berlin: Urban & Schwarzenberg, 1927.

Research on the Bárány sign.

SEX AND THE LOVE-LIFE. By William J. Fielding. Cloth. Price, $2.50. Pp. 322. New York: Dodd Mead & Company, 1927.

Uninspired compilation of many current conceptions of sex-life, but not especially critical.

LEHRBUCH DER ENZYME: Chemie, physikalische Chemie und Biologie. Von Prof. Carl Oppenheimer, Dr. Phil. et Med. in Berlin. Paper. Price, 33 marks. Pp. 660, with 18 illustrations. Leipsic: Georg Thieme, 1927.

Physiologic chemistry of the ferments.

IMMUNITY IN SYPHILIS. By Alan M. Chesney, Johns Hopkins Medical School. Cloth. Price, $2.50. Pp. 85. Baltimore: Williams & Wilkins Company, 1927.

Monograph summarizing recent research.

THE RADCLIFFE INFIRMARY. By Alexander George Gibson. Cloth. Price, $7. Pp. 316. New York: Oxford University Press, 1926.

History of a famous adjunct of Oxford University.

SYPHILIS, PALUDISME, AMIBIASE. Notes de thérapeutique pratique. Par Paul Ravaut, médecin de l'hôpital Saint-Louis. Préface du Professeur Fernand Widal. Third edition. Paper. Price, 22 francs. Pp. 284. Paris: Masson & Cie, 1927.

LE SIXIÈME SENS. (Sens génésique). Organes de la génération. Fonction sexuelle. Aberrations génitales. Curiosités relatives aux seins. Par Docteur Cabanés. Cloth. Price, 12 francs. Pp. 259. Paris: E. le François, 1927.

LA HELIOTERAPIA artificial en el tratamiento de la tuberculosis laringea. (Comunicación al Primer Congreso de la Asociación Hispano Americana de Oto-rino-laringologia). Por Dr. Oller Rabasa. Paper. Pp. 11. Barcelona, 1926.

TRANSACTIONS OF THE THIRTY-FIRST ANNUAL MEETING OF THE AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY. Cloth. Pp. 569, with illustrations. Chicago, 1926.

L'HYSTÉRECTOMIE SUBTOTALE OBLIQUE. Par Martin Gomes, professeur à la faculté de médecine de Porto Alegre. Paper. Pp. 19, with 12 illustrations. Porto Alegre, 1927.

Medicolegal

Insured Following Directions of Own Physician

(Cirullo v. Society Sons of Calabria, Inc. (Mass.), 153 N. E. R. 532)

The Supreme Judicial Court of Massachusetts says that a translation of the defendant's by-laws, which were printed in Italian, was in part as follows:

Article 70. The payment of sick benefit will be made, weekly if the member desires it, and on the report of the society doctor and on the presentation of doctor's certificate.

Article 79. The sick member may be cared for by another doctor at his own expense; however, he may not refuse the visit of the society doctor for the purpose of ascertaining the nature of his illness. In case he refused to permit the society doctor to visit him he will lose his right to aid.

Article 80. The sick member who is receiving aid shall not leave the house or the hospital without the permission of the society doctor, under penalty of suspension of the aid.

The plaintiff had an attack of arthritis in his left knee joint, March 18, 1925, which caused him severe pain and incapacitated him from work up to the time of the commencement of this action to recover sick benefits as a member of the defendant society. The society's physician was notified of his illness and attended him at his home several times up to April 2, after which date the plaintiff sent messages to the physician requesting him to call and attend him, but the physician did not call for several days, and the plaintiff placed himself under the care and treatment of another physician, who remained on the case until the time of the commencement of these proceedings, his services being paid for by the plaintiff. There was also evidence that while the society's physician was in attendance he told the plaintiff that he must not leave his house, and he never received permission from that physician to leave it. But the physician employed by the plaintiff prescribed electric treatment and massage and directed the plaintiff to come to his office for such treatment, and the plaintiff was carried there by automobile for such treatment.

The employment by the plaintiff at his own expense of a physician other than the society's physician was expressly authorized by article 79. While under the care of the physician he employed he could follow that physician's directions and go to his office for treatments without violating the provisions of article 80, which, properly construed, do not apply to a case in which a member employs a physician other than the society's physician. These provisions of the by-laws must be taken together and interpreted reasonably. It must be assumed that when a member exercises his right under article 79 to employ another physician he is under the care of that physician and may follow his instructions, and he does not forfeit his right to aid if, under such instructions, he goes to the physician's office for treatment which he cannot receive in his own home. Such must be the reasonable and just meaning of articles 79 and 80 when construed together.

The plaintiff could not be deprived of the aid provided for in article 70 and other articles of the by-laws because he did not present a certificate issued by the society's physician, the latter having refused to issue one after request made to him by the plaintiff. When a member elects to have the services of a physician other than one furnished by the society under article 79, it is plain that the physician actually employed may furnish the society with such certificate. No contention was made that the plaintiff refused to permit the society's physician to visit him for the purpose of ascertaining the nature of his illness, as provided in article 79. Furthermore, unless the provisions of article 70 were limited to the payment of weekly benefits, they were not applicable to the present case, in which the plaintiff employed a physician other than the society's physician, and the former issued a certificate and the latter refused to do so.

There was a finding for the plaintiff, and an order dismissing a report of the case to the appellate division of the district court is affirmed.

Injury to Eye from Smoke and Overexertion Accidental

(Dondeneau v. State Industrial Accident Commission (Ore.), 249 Pac. R. 820)

The Supreme Court of Oregon, in affirming a judgment in favor of the claimant under the workmen's compensation law, says that while he was employed by a lumber company he assisted in fighting a forest fire. Afterward his left eye became inflamed, and glaucoma was developed in it. While the parties agreed that the eye trouble was caused by the irritation from the heat, smoke and overexertion in fighting the fire, the state industrial accident commission rejected the claim for compensation because it did not consider that the condition of the eye was caused by an accidental injury within the meaning of the compensation law. But the court holds otherwise. While the claimant voluntarily entered into the work of fighting the fire, he did not intentionally admit the poisonous gas and smoke into his eye. The fact that the injury was caused by smoke or gas, together with superexertion, did not change the cause of the injury. It was as much an accident as though a live cinder had been received into the eye burned, resulting in the loss of sight. The means of the injury was unexpected and unusual, and it would seem that the very unusualness of the means, as well as of the result, tended to magnify the accidental nature of the means as well as the result of the injury. The cause, as well as the effect, was an extremely rare accident. Events are called accidents because they are not anticipated, not expected, unusual, and out of the ordinary. The injury to the eye was not less the result of accidental means on account of the claimant not being able to fix the exact time of the injury.

Conduct Rendering Father Liable for Services to Son

(McConnell v. Lamontagne (N. H.), 134 Atl. R. 718)

The Supreme Court of New Hempshire, in this action described as one in assumpsit to recover for medical services rendered by the plaintiff to the defendant's minor son, says that by the common law as adopted in that jurisdiction there is no legal liability of a parent to third parties for necessaries furnished a minor child in the absence of an express or implied contract. New Hampshire statute law, at the date of the services for which recovery was sought, provided only for the indemnity of the public against the maintenance of paupers, and not for the reimbursement of an individual who may have relieved the necessities of the minor. There being no such legal liability and no express agreement, the defendant's liability, if any, must rest on evidence of the conduct of the parties from which a mutual understanding might be inferred.

The son was only 17 years of age and was occupying a room with the defendant at a boarding house. During the temporary absence of the father the boy was taken very ill, and on the suggestion of his landlady he was taken by the plaintiff to the hospital for emergency treatment and there remained under his care for 100 days. The father, on his return from work the night of the boy's removal to the hospital, and thereafter on Sundays and as often as convenient during each week, visited the boy at the hospital. He wanted to transfer the boy to a "hospital for the poor," but the boy would not consent. The plaintiff continued his treatment, to which the father offered no further objection. Following one of his visits to the hospital, on the suggestion of the "sisters" in charge, the defendant accompanied another son to the plaintiff's office to request a change in treatment, which request was granted and acted on. The defendant's only objections to paying the plaintiff's bill, which was presented, after the treatment, was that he did not make the arrangement to have the son taken to the hospital, that the bill was large, and that he could not afford to pay. He testified that if he had had the money he should have paid the bill. The plaintiff testified that he supposed the father would pay.

In ascertaining the understanding of the parties, their situation, including the relationship of the father and son, and the moral obligations and natural impulses incident to that relation, were material and important, not as evidence, in and of themselves, of a legal obligation or of an implied contract, but of the situation in the light of which the understanding of the parties must be sought and their words and conduct interpreted.

Had the defendant been present and accompanied his minor son to the hospital when the situation arose which necessitated the boy's removal and the plaintiff's services, and had he given the plaintiff directions as to the treatment of the boy, there could be question neither as to the competence nor as to the persuasive character of the evidence of the defendant's conduct to support an implied promise to pay the plaintiff for such services. The fact of the father's absence when the emergency requiring treatment arose was not controlling. The defendant's subsequent direction to the plaintiff to change his treatment tended to prove the defendant's acceptance of, and promise to pay for, the services which the defendant was under a moral obligation to supply. A jury could find that the defendant, under such circumstances, understood that a reasonable person in the position of the plaintiff, having a like realization of the defendant's relationship and natural obligation, would be induced to continue the treatment of the son on the expectation that the defendant intended to pay therefor. Such treatment being continuous from its inception, the defendant's acceptance of the plaintiff's services had the force of a prior request.

The direct testimony of the plaintiff that he supposed the father would pay was competent evidence of the plaintiff's understanding. That the defendant had a like understanding might be inferred (1) from proof of his attempt to secure the consent of the son to be transferred to a hospital where presumably there would be no expense of treatment, notwithstanding such attempt did not come to the plaintiff's attention; and (2) from the defendant's direct testimony that, if he had had the money, he should have paid the plaintiff's bill when rendered. It therefore could be found that the actual understandings of the parties concurred in support of the inference to be drawn from their overt acts, that the parties mutually expected that the defendant would pay for the plaintiff's services. As, on the law and the evidence, an implied promise by the defendant could be found, there must be judgment for the plaintiff.

Ostearthritis and Injury—Opinions of Experts

(Fitzsimmons v. State Industrial Commission et al. (Okla.), 250 Pac. R. 111)

The Supreme Court of Oklahoma says, on the reappearance before it of this proceeding under the workmen's compensation act, that in January, 1926, the state industrial commission found that the injury sustained by the claimant, May 24, 1924, was a strain of muscles in the lumbar regions of the back, and that fracture or other injuries of the vertebra were not sustained as a result of this accident; that in January, 1926, he was disabled from the performance of ordinary manual labor, and that such disability was caused by ostearthritis, and that the accident and muscular strain resulting therefrom did not cause, exaggerate, accelerate or otherwise affect the ostearthritis; that the disability resulting from the muscular strain caused by the injury did not extend beyond Oct. 14, 1924, to which date the claimant had received compensation; wherefore it was ordered that his claim for further compensation be denied, and the cause dismissed.

The theory of the employer at the last hearing was that the injury sustained by the claimant consisted of a sprain of the muscles of his back, and it was testified by two experts that muscular injuries to the back would ordinarily get well in the course of from four to six weeks, and on the theory that the injury was wholly muscular, these experts gave it as their opinion that the petitioner had fully recovered from that injury, and it was argued that the testimony of these witnesses was some evidence, and that this court would not disturb the finding of the state industrial commission when there was any evidence tending to support such finding. This court recognizes this rule; but it does not recognize, under the admitted facts in this case, that the opinion of the experts referred to was of any probative force whatever. The opinion of skilled physicians is competent to prove the cause, extent and duration of the injury, and is frequently the only evidence that the nature of the case will permit; but the opinion of an expert, to be competent, must be based on facts admitted or

established. The testimony of the experts in this case was to the effect that if the injury affected only the muscles surrounding the vertebra affected by ostearthritis, then such injury would disappear in from six to eight weeks, but if the injury was such as to involve the parts of the vertebra affected by ostearthritis, it would be permanent. There were no facts, proved or admitted, to warrant the assumption that the injury complained of did not involve the affected vertebra. The industrial commission found that the petitioner was disabled as a result of the injury for nearly five months, twice as long as would have been expected had the injury been only muscular. This court concludes, therefore, that there was no competent evidence tending to show that the disability suffered on May 24, 1924, had ceased on Oct. 14, 1924; and the case is remanded, with directions that compensation be ordered for the claimant until such time as the employer by competent evidence establishes that the disability had been removed, not exceeding, however, the limitation fixed by statute.

According to the syllabus by the court, the court holds that the fact that the employee had prior to his injury a disease or bony growth, unknown to him, and such as did not impair him from performing labor, which disease or growth was aggravated by the injury, would not prevent him from recovering compensation for the entire time of his disability and until such time as it could be definitely determined that the disability caused by the injury had ceased.

Denial of Physician's Claim for Treating Employee

(Favor's Case (Mass.), 153 N. E. R. 542)

The Supreme Judicial Court of Massachusetts, in affirming a decree which affirmed a finding of the industrial accident board denying a physician's claim for medical services rendered an injured employee, says that the employee was injured, Dec. 28, 1922. She instituted proceedings under the workmen's compensation act, and on Oct. 26, 1923, a lump sum settlement was approved by the board. The agreement for settlement so made recited that the payments were received "in compromise settlement, including hospital and medical expenses." The physician charged $127 for treating her for her injuries, his last treatment, according to his bill, being on April 5, 1923. He testified that he first learned of the settlement in September, 1924. He first requested a hearing before the board on the allowance of his bill in January, 1926, and a hearing was held, March 2, 1926. The board decided "that under all the circumstances existing in this case the present petitioner's claim should be denied."

Section 13, chapter 152, general laws of Massachusetts, provides in part that fees of physicians for services under the chapter "shall be subject to the approval of the department." The statute further provides that:

> If the insurer and any physician . . . fail to agree as to the amount to be paid for such services, either party may notify the department, which may thereupon assign the case for hearing by a member thereof. The member shall report the facts to the department for decision. . . .

It is provided by section 30 of the same chapter that:

> During the first two weeks after the injury, . . . and in unusual cases, in the discretion of the department, for a longer period, the insurer shall furnish adequate and reasonable medical and hospital services, and medicines if needed. . . . Such approval shall be granted only if the department finds . . . that the services were adequate and reasonable and the charges reasonable.

It thus appears that, before the insurer can be made responsible for the payment of charges for medical services, they must be approved by the department. There was evidence of services rendered by this physician and the amount of his bill, but there was no evidence to show that the services were adequate and reasonable or that the charges were reasonable. The evidence before the board presented questions of fact, and this court cannot say that its decision was erroneous. It may have found that the services were not adequate and reasonable and that the charges were not reasonable. It was obvious on this record that this was not an unusual case within the meaning of the statute. No question of law on this record was presented for decision. It was unnecessary to decide whether the patient was alive when the physician presented his claim.

Society Proceedings

COMING MEETINGS

American Medical Association, Washington, D. C., May 16-20. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association for the Study of Allergy, Washington, D. C., May 16-17. Dr. A. H. Rowe, 242 Moss Ave., Oakland, Calif., Sec'y.
American Association for Thoracic Surgery, New York, May 9-11. Dr. Ethan Flagg Butler, Robert Packer Hospital, Sayre, Pa., Secretary.
American Association of Genito-Urinary Surgeons, Absecon, N. J., May 9-11. Dr. W. C. Quinby, Peter Bent Brigham Hospital, Boston, Sec'y.
American Bronchoscopic Society, Atlantic City, May 21. Dr. H. B. Orton, 24 Commerce Street, Newark, N. J., Secretary.
American Child Health Association, Washington, D. C., May 9-11. Dr. Philip Van Ingen, 125 East 71st Street, New York, Secretary.
American Climatological and Clinical Association, White Sulphur Springs, W. Va., May 23-27. Dr. A. K. Stone, Auburn Street, Framingham Center, Mass., Secretary.
American Gastro-Enterological Association, Atlantic City, May 2-3. Dr. John Bryant, 338 Marlborough Street, Boston, Secretary.
American Gynecological Society, Hot Springs, Virginia, May 23-25. Dr. F. E. Keene, Medical Arts Building, Philadelphia, Secretary.
American Heart Association, Washington, D. C., May 17. Dr. Haven Emerson, 370 Seventh Avenue, New York, Secretary.
American Laryngological Association, Atlantic City, May 23-25. Dr. G. M. Coates, 1721 Pine Street, Philadelphia, Secretary.
American Laryngological, Rhinological and Otological Society, Atlantic City, May 26-28. Dr. R. L. Loughran, 33 East 63d Street, New York, Secretary.
American Neurological Association, Atlantic City, May 24-26. Dr. H. A. Riley, 870 Madison Avenue, New York, Secretary.
American Proctologic Society, Philadelphia, May 12-14. Dr. Louis A. Buie, Mayo Clinic, Rochester, Minn., Secretary.
American Psychiatric Association, Cincinnati, May 31. Dr. E. D. Bond, 4401 Market Street, Philadelphia, Secretary.
American Psychopathological Association, Cincinnati, June 3. Dr. M. W. Peck, 520 Commonwealth Avenue, Boston, Secretary.
American Radium Society, Washington, D. C., May 16-17. Dr. E. C. Ernst, 412 Humboldt Building, St. Louis, Secretary.
American Society of Clinical Investigation, Atlantic City, May 2. Dr. J. T. Wearn, Boston City Hospital, Boston, Secretary.
American Society of Clinical Pathologists, Washington, D. C., May 13-16. Dr. Ward T. Burdick, Children's Hospital, Denver, Secretary.
American Surgical Association, Richmond, Va., May 12-14. Dr. R. B. Greenough, 8 Marlborough Street, Boston, Secretary.
American Therapeutic Society, Washington, D. C., May 14-16. Dr. W. J. Mallory, 1720 Connecticut Ave., N. W., Washington, D. C., Secretary.
American Urological Association, Baltimore, May 23-25. Dr. H. G. Hamer, 723 Hume-Mansur Building, Indianapolis, Secretary.
Arkansas Medical Society, Little Rock, May 11-13. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.
Associated Anesthetists of the United States and Canada, Washington, D. C., May 16-17. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
Association of American Physicians, Atlantic City, May 3-4. Dr. F. W. Peabody, Boston City Hospital, Boston, Secretary.
Connecticut State Medical Society, Hartford, May 25-26. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Georgia, Medical Association of, Athens, May 11-13. Dr. Allen H. Bunce, 65 Forrest Avenue, Atlanta, Secretary.
Hawaii Territorial Medical Association, Honolulu, May 2-4. Dr. F. J. Pinkerton, 46 Young Building, Honolulu, Secretary.
Illinois State Medical Society, Moline, May 31-June 2. Dr. H. M. Camp, Lahl Building, Monmouth, Secretary.
Iowa State Medical Society, Council Bluffs, May 11-13. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
Kansas Medical Society, Hutchinson, May 3-5. Dr. J. F. Hassig, 804 Huron Building, Kansas City, Secretary.
Maine Medical Association, Portland, June 13-15. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
Massachusetts Medical Society, Boston, June 6-8. Dr. W. L. Burrage, 182 Walnut Street, Brookline, Secretary.
Medical Library Association, Washington, D. C., May 16-17. Miss Sue Biethan, General Library, University of Michigan, Ann Arbor, Sec'y.
Medical Women's National Association, Washington, D. C., May 15-17. Dr. Maud Parker, Medical Dental Building, Seattle, Secretary.
Michigan State Medical Society, Mackinac Island, June 14-17. Dr. F. C. Warnshuis, Grand Rapids National Bank Bldg., Grand Rapids, Sec'y.
Mississippi State Medical Association, Vicksburg, May 10-12. Dr. T. M. Dye, McWilliams Building, Clarksdale, Secretary.
Missouri State Medical Association, Sedalia, May 2-5. Dr. E. J. Goodwin, 901 Missouri Building, St. Louis, Secretary.
National Association for the Study of Epilepsy, Cincinnati, May 30-31. Dr. A. L. Shaw, 108B Olbiston Building, Utica, N. Y., Secretary.
National Tuberculosis Association, Indianapolis, May 23-26. Dr. G. M. Kober, 1819 Q. Street, N. W., Washington, D. C., Secretary.
Nebraska State Medical Association, Lincoln, May 10-12. Dr. R. B. Adams, McKinley Building, Lincoln, Secretary.
New Hampshire Medical Society, Portsmouth, June 22-23. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Jersey, Medical Society of, Atlantic City, June 9-11. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.
New Mexico Medical Society, Carlsbad, May 9-11. Dr. C. M. Yater, 310 N. Richardson Avenue, Roswell, Secretary.
New York, Medical Society of the State of, Niagara Falls, May 9-12. Dr. D. S. Dougherty, 2 East 103d Street, New York, Secretary.
North Dakota State Medical Association, Grand Forks, June 1-2. Dr. J. G. Lamont, San Haven, Acting Secretary.
Ohio State Medical Association, Columbus, May 10-12. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.
Oklahoma State Medical Association, Muskogee, May 4-6. Dr. C. A. Thompson, 609 Barnes Building, Muskogee, Secretary.
Rhode Island Medical Society, Providence, June 2. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.
South Dakota State Medical Association, Huron, May 3-5. Dr. John F. D. Cook, Langford, Secretary.
West Virginia State Medical Association, White Sulphur Springs, June 21-23. Mr. Sterrett O. Neale, 303 Professional Building, Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

79: 537-749 (Feb.) 1927

*Comparative Physiologic Values of Five Carbohydrates. H. S. Mitchell, Battle Creek, Mich.—p. 537.
*Comparative Physiologic Values of Different Amounts of Lactose. H. S. Mitchell, Battle Creek, Mich.—p. 542.
*Blood Reactions of Alkaloids of Ceanothus Americanus. C. E. Tharaldsen and J. Krawetz, Evanston, Ill.—p. 545.
*Pancreatic Diabetes and Pregnancy. J. Markowitz and S. Soskin, Toronto.—p. 553.
*Intravenous Administration of Amino-Acids to Decerebrate and Urethanized Cats. J. C. Aub, M. R. Everett and J. Fine, Boston.—p. 559.
Quantitative Study of Salivary Conditioned Reflex. N. Kleitman and G. Crisler, Chicago.—p. 571.
*Calcification with Different Protein Supplements. L. A. Maynard and R. C. Miller, Ithaca, N. Y.—p. 615.
*Calcification with Menhaden Oil and Menhaden Fish. R. C. Miller and L. A. Maynard, Ithaca, N. Y.—p. 626.
*Effect of Forcing Fluids on Survival After Bilateral Epinephrectomy. E. L. Corey, New Haven, Conn.—p. 633.
*Suprarenal Cortex: I. Survival Value. R. L. Zwemer, New Haven, Conn.—p. 641.
*Id.: II. Prolongation of Life After Complete Epinephrectomy. R. L. Zwemer, New Haven, Conn.—p. 658.
*Id.: Blood Changes Following Bilateral Epinephrectomy in Cats. W. W. Swingle, New Haven, Conn.—p. 666.
Id.: II. Acid-Base Equilibrium of Epinephrectomized Cats. W. W. Swingle and A. J. Eisenman, New Haven, Conn.—p. 679.
*Physiology of Liver: II. Effect of Epinephrine on Blood Sugar Following Ligation of Hepatic Artery. W. S. Collens, D. H. Shelling and C. S. Byron, New York.—p. 689.
Inorganic Salt Metabolism in Dogs: III. Factors Which Influence Deposition and Resorption of Bone. M. R. Jones, San Francisco.—p. 694.
Effect of Blood Calcium Level on Tolerance to Magnesium: Hypercalcemia Induced by Parathyroid Hormone. S. A. Matthews and W. C. Austin, Chicago.—p. 708.
Heat Production in Smooth Muscle. C. D. Snyder, Baltimore.—p. 719.

Comparative Values of Carbohydrates.—Mitchell summarizes her work as follows: Observations of intestinal flora show that the percentage of acidophilus runs parallel to the amounts of the sugar lost in the feces but in general the rate of growth is in the reverse ratio; i. e., lactose as the sole source of carbohydrate promotes the best growth of acidophilus but the poorest growth of the animal, while cornstarch commonly used in experimental feeding promotes excellent growth in the rat but does not effect any change in the intestinal flora. High percentage acidophilus persists so long as diarrhea accompanies the feeding of lactose, but intestinal stasis produced while on the same lactose diet allows the flora to revert to the putrefactive type. By the use of certain carbohydrates the intestinal flora of rats may be changed to an aciduric type, but after continued use of the carbohydrate over a long period of time its effectiveness seems to diminish, and the flora reverts toward the putrefactive type.

Physiologic Value of Lactoses.—Mitchell asserts that when a change in intestinal flora is desired, it may be made without interference in growth or well being if lactose furnishes not more than 30 per cent of the diet or 50 per cent of the total carbohydrate.

Effect of Ceoanthus Alkaloids on Blood.—It is shown by Tharaldsen and Krawetz that the alkaloids of *Ceanothus americanus* reduce the clotting time of blood, and that this action may take place independent of body tissues or digestion, as well as when administered orally or subcutaneously. Experimental evidence seems to indicate that this action is due to an acceleration of the reaction of thromboplastin by these alkaloids.

Pancreatic Diabetes and Pregnancy.—Markowitz and Soskin noted that the carbohydrate balance remained unchanged from day to day during pregnancy in a depancreatized dog treated with insulin. In two dogs which were depancreatized during the later stages of pregnancy and given small doses of insulin, the diabetic symptoms, as judged from the behavior of the blood sugar, the D:N ratio and the respiratory quotient, were as severe as would be expected after pancreatectomy in nonpregnant animals. Evidence is therefore lacking that the fetal pancreas can secrete into the maternal organism a sufficient amount of insulin to offset the diabetic condition caused by pancreatectomy. The mammary glands in all three animals failed to hypertrophy properly.

Specific Dynamic Action of Proteins.—The experiments made by Aub et al. demonstrated that the decerebrate preparation offers a means for further investigation of the mechanisms involved in the specific dynamic action of protein.

Calcification Studies.—In studies with growing swine, using the ash content of the femurs as the measure of calcification, Maynard and Miller found that better calcification was caused by a ration containing fish meal as the protein supplement, and also by a ration containing blood meal and casein as the supplements, than by a ration containing linseed oil meal as the protein supplement. All these rations were similar as regards their content of calcium and phosphorus, which were supplied in approximately a 1:1 ratio, ground limestone and bone meal being used to help provide these minerals in the oil-meal ration and in the casein-blood-meal ration. All the rations caused rapid and nearly equal growth, but the oil-meal ration was slightly surpassed by the other two in this respect. With a fourth ration, identical with the casein-blood-meal ration with the exception that its calcium content was greatly lowered and its phosphorus content slightly by the omission of the mineral supplements, the rate of growth was nearly equal to that caused by the same ration with the mineral supplements, but the ash content of the femurs was about 35 per cent less, and the characteristic external symptoms of inadequate mineral nutrition developed.

Calcification with Menhaden Fish.—Menhaden fish meal is obtained from the menhaden fish, *Brevoortia tyrannus*. The whole fish are usually cooked to break down the moisture and oil cells, some menhaden oil being obtained thereby. Further extraction of the oil is accomplished by pressing; the residue is then dried and ground, the product being known as fish meal. Studies are reported by Miller and Maynard with growing rats in which the ash content of the leg bones was used as the measure of calcification, from which it is concluded that menhaden fish meal and menhaden oil contain the specific factor aiding calcification.

Forced Fluids After Bilateral Epinephrectomy.—Corey asserts that the oral administration of large quantities of fluid to bilaterally epinephrectomized cats prolongs life. Solutions of certain substances, i. e., dextrose or sodium chloride, are more effective than others in maintaining the animal in a normal condition.

Survival Value of Suprarenal Cortex.—Zwemer found that unilateral extirpation of the suprarenal of cats does not have an ill effect on the animal. Cats deprived of both glands, in two stages with an interval of from five to twenty days between operations, will survive, on an average, fifty-three hours. Animals retaining only the cortex of one gland with undisturbed blood supply survive indefinitely, showing that the medullary portion of the suprarenal complex is not essential for life. Transplants of the suprarenal cortex prolonged life in epinephrectomized cats six and a half days, on an average, but degeneration of the graft eventually caused death.

Prolonging Life After Epinephrectomy.—The oral administration of a 5 per cent solution of dextrose, if given in sufficient quantities, Zwemer avers, will prolong the life of epinephrectomized cats for an average of 220 hours.

Blood Changes Following Epinephrectomy.—The suggestion is made by Swingle that death following suprarenal removal may possibly be due to either of two causes: hypoglycemia or acid intoxication, since both phenomena are

invariably associated with suprarenal insufficiency. The hypoglycemia can be corrected by dextrose injection, but the animal eventually dies with symptoms of acid intoxication. The acidosis appears to be due to failure of the kidney to eliminate acids properly, and is of the same general nature as that occurring as a result of certain types of chronic nephritis.

Physiology of Liver.—Experimental results obtained by Collens et al. seem to indicate that the sugar concentration of the blood is not necessarily an index of the amount of glycogen present in the tissues. It seems that the first symptoms of hypoglycemia depend not so much on the blood sugar concentration as on the exhaustion of tissue glycogen, and hence epinephrine without dextrose would be without value in increasing the blood sugar concentration during insulin overdosage in diabetic persons with an abnormally low glycogen reserve.

American Journal of Psychiatry, Baltimore

6: 413-611 (Jan.) 1927

Mental Pictures in Schizophrenia and Epidemic Encephalitis. S. E. Jelliffe, New York.—p. 413.
Affective Experience in Early Schizophrenia. H. S. Sullivan, Baltimore.—p. 467.
Need of Analytic Psychiatry. T. Burrow, Baltimore.—p. 485.
Physical Constitution of Female Psychiatric Patients. F. I. Wertheimer and F. E. Hesketh, Baltimore.—p. 499.
Bibliography of American Contributions to War Neuropsychiatry. N. Fenton, Columbus, Ohio, and D. E. Morrison, Washington, D. C.—p. 507.
Impressions of Pathology of Epilepsy from Operations. W. E. Dandy, Baltimore.—p. 519.
Hysteria: H-R Syndrome of Kretschmer. E. E. Mayer, Pittsburgh.—p. 523.

American Journal of Surgery, New York

2: 1-100 (Jan.) 1927

Operative Treatment of Hernia by Living Sutures. B. L. Coley and E. Burke, New York.—p. 1.
Petrous Pyramid. J. D. Richards, New York.—p. 11.
Electrotherapy vs. Surgery in Abdominal Affections. L. H. Levy, New Haven, Conn.—p. 23.
Fracture of Femur. J. M. Hitzrot, New York.—p. 28.
Management of Hand Infections. H. H. LeSeur, Batavia, N. Y.—p. 38.
Nonpenetrating Wounds of Abdomen. A. M. Dickson, Albany, N. Y.—p. 43.
Principles of Fourth Era in Surgery. R. T. Morris, New York.—p. 51.
Railway Accidents: Complications. P. E. McSweeney, Burlington, Vt.—p. 54.
Torsion of Spermatic Cord in Infant. M. Thorek, Chicago.—p. 58.
Mastoid Suction Wiper. M. J. Mandelbaum, New York.—p. 60.
Genital Support for Perineal Operations. C. J. Drueck, Chicago.—p. 62.

Annals of Clinical Medicine, Baltimore

5: 593-751 (Jan.) 1927

Significance of Basal Blood Pressure Readings. F. J. Sladen and R. L. Johnston, Detroit.—p. 593.
*Experimental Nephritis. F. W. Hartman, Detroit.—p. 599.
*Cardiovascular Features of Hyperthyroidism. F. J. Smith and L. T. Colvin, Detroit.—p. 616.
*Toxic Goiter. R. D. McClure and A. B. McGraw, Detroit.—p. 626.
Thyroid Medication in Hypothyroidism. A. E. Koehler, Detroit.—p. 635.
Influence of Insulin on Treatment of Surgical Complications in Diabetes Mellitus. D. P. Foster and E. C. Davidson, Detroit.—p. 639.
*Treatment of Bronchial Asthma. F. R. Menagh, Detroit.—p. 656.
Internal Secretion of Ovary. J. P. Pratt, Detroit.—p. 663.
Simplification of Obstetric Care. E. D. Plass and R. S. Siddall, Detroit.—p. 671.
*Scleroderma with Extensive Calcification. R. H. Durham, Detroit.—p. 679.
Sedatives in Nervous and Mental Cases. T. J. Heldt, Detroit.—p. 692.
Demonstrations and Graphic Studies. G. B. Smith, Detroit.—p. 698.
Radiation Reactions: Treatment. H. P. Doub, Detroit.—p. 715.
Pyelography. J. K. Ormond, Detroit.—p. 720.

Experimental Roentgen-Ray Nephritis.—Hartman reports on the experimental production of nephritis in dogs by means of exposure to the roentgen ray emanating from a water-cooled tube.

Cardiovascular Symptoms of Hyperthyroidism.—The objective results obtained in several hundred cases are recorded by Smith and Colvin. Tachycardia was the most striking phenomenon encountered. The systolic blood pressure of patients with hyperthyroidism in both the adenomatous and hyperplastic types was generally slightly elevated, and the diastolic pressure somewhat lowered. The pulse has been dynamic in character, as a rule, and a collapsing or Corrigan pulse was noted frequently. Over the femoral artery in the groin a systolic tone was heard uniformly, and was occasionally of sufficient intensity to be characterized as a "pistol shot" sound. Inspection of the large arteries generally revealed well marked peripheral throbbing, especially noticeable in the carotid arteries and in the abdominal aorta. The cardiac apex impulse was often diffuse, covering two or more interspaces, and in some cases abrupt, causing a distinct systolic shock, while in others there was present a suggestive thrill difficult to time, and variously recorded by different observers. The character of the heart sounds may best be described as thudding or loud. The first sound at the apex was often abrupt and somewhat roughened. Systolic murmurs were very common—usually present at the cardiac apex and louder in the pulmonic area. In 40 or 50 per cent of patients, a rubbing sound in the pulmonic area limited to systole was heard. In some individuals this rub has been very intense, while in others it merely seemed to roughen the systolic murmur already present in this area. In every case, after recovery from thyroidectomy and relief of toxicity, this condition has disappeared; while in a very few patients who have had subsequent relapses into hyperthyroidism, its presence was again noted. Any degree of cardiac hypertrophy was unusual.

Analysis of Toxic Goiter Cases.—In 211 cases analyzed by McClure and McGraw, 55 per cent of the patients were severely toxic; 30 per cent have been mildly toxic and 15 per cent have failed to show toxic symptoms. Of the 118 severely toxic patients, 55 per cent had parenchymatous hypertrophy and hyperplasia only; 26 per cent had fetal adenomas; 5.5 per cent adult adenomas; 4.2 per cent mixed adenomas and hyperplasia, and 8.5 per cent colloid goiters; there was a single case of tuberculosis of the thyroid. Of the sixty-two moderately toxic cases, 21 per cent showed parenchymatous hypertrophy and hyperplasia; 51 per cent were fetal adenomas; 5.5 per cent adult adenomas; 11 per cent mixed adenoma and hyperplasia; 1 per cent colloid goiter, and again there was a single case of tuberculosis of the thyroid. Of the thirty-one nontoxic cases, only 3.2 per cent showed hypertrophy and hyperplasia alone; 58 per cent were fetal adenomas; 16 per cent were adult adenomas; 3.2 per cent mixed adenoma and hyperplasia, and 19.5 per cent colloid goiters. Forty-three per cent of the severely toxic, 38 per cent of the moderately toxic, and 20 per cent of the nontoxic goiter patients were either unaware of having a goiter or else did not give it as their chief entrance complaint.

Treatment of Bronchial Asthma.—The results of treatment in 300 cases of bronchial asthma have been studied by Menagh. Treatment has been largely directed toward the discovery of the causative foreign protein and its removal. Surgery of the throat and nose and the use of vaccines have been of great value. As the result of treatment, 27.7 per cent of these patients were improved, 12.7 per cent unimproved and 28.3 were symptom-free.

Scleroderma with Extensive Calcification.—Durham's patient was 67 years of age. The clinical history of the case was of thirty-seven years' duration. Death resulted from bronchopneumonia. Very few similar cases of deranged calcium metabolism in association with scleroderma have previously been reported. In no other reported case was the degree of arteriosclerosis and vascular calcification so extensive. The occurrence of scleroderma and calcification in the same areas suggests that their occurrence was not a mere coincidence. The serum calcium content in this case was slightly below normal. There was no histologic evidence of parathyroid dysfunction.

Bull. Association of American Med. Colleges, Chicago

2: 97-192 (April) 1927

*Disposition of Applicants for Admission to Schools of Medicine for 1926-1927. B. D. Myers, Bloomington, Ind.—p. 97.
*Plea for Further Extension of Clinical Opportunity into Earlier Years of Medical Course. H. Cabot, Ann Arbor, Mich.—p. 105.
*Teaching of Medical Economics. A. T. Lytle, Buffalo.—p. 115.
Periodic Health Examinations. J. M. Dodson, Chicago.—p. 124.
*Training by and for Conferences. J. B. Miner, Louisville, Ky.—p. 129.
Clinical Clerkships in Medicine. Student Unit System. J. W. Moore, Louisville, Ky.—p. 136.
*Woman as Student of Medicine. A. C. Curtis, Ann Arbor, Mich.—p. 140.

Teaching of Obstetrics in Stanford University School of Medicine. A. B. Spaulding, San Francisco.—p. 149.
Some Aspects of Medical Education and Procedure. C. F. Martin, Montreal.—p. 152.

Analysis of Applicants for Admission to Medical Colleges.—For the school year 1926-1927, Myers says there was a total of 20,093 applications made by about 8,500 applicants. Of those 20,000 applications, 6,420 were accepted. Of those accepted, 154 were repeaters. However, there were only 5,019 enrolments. Of the applicants accepted, 3,777 applied to one school only; 795 applied to two schools; 311 to three; 159 to four; 86 to five; 70 to six; 48 to seven; 35 to eight; 18 to nine; 16 to ten; 11 to eleven; 7 to twelve; 4 to thirteen; 5 to fourteen; 4 to fifteen; 1 to sixteen, and 2 to seventeen. Among those that were refused, 3,586, there were 2,479 who evidently applied to the school of their choice, were refused, and accepted the refusal. Five hundred and eighteen applied to two schools; 215 to three schools; 137 to four; 87 to five; 42 to six; 26 to seven; 30 to eight; 11 to nine; 16 to ten; 10 to eleven; 6 to twelve; 2 to thirteen; 3 to fourteen; 1 to fifteen; 1 to seventeen; 1 to nineteen, and 1 to twenty.

More Clinical Teaching in Medical Schools.—Cabot says we spend most of four years in teaching scientific method and scientific approach in which the laboratory animal is an important factor. Hardly anywhere do we even attempt to teach methods of approach and understanding of human beings. It is not, therefore, surprising that the recent graduate, as exemplified by the intern, is likely to approach his patient as if he were simply an enlarged and unreasonable laboratory animal. The fact that the patient is human, that his relation to the physician will be importantly affected by that physician's approach and attitude of mind are lost sight of, and this importantly impedes the ability of the recent graduate to get in any relation to his patients which is likely to lead to their understanding. This, Cabot thinks, springs directly from the disproportionate teaching of laboratory method, and from the belief which has been voiced by eminent authority that the method of approach of the clinician to his patient should in no particular differ from that of the scientist to his laboratory animal. This attitude has become a very real one in the modern medical student and is importantly responsible for the fact that the community does not always find them sympathetic attendants or sound advisers. If we are, in fact, engaged in the business of preparing people for the practice of medicine, Cabot continues, they must have longer and more intimate contact with the subject of their study. They must be better prepared to understand the intricacies of the human mind. This can best be achieved by the extension into an earlier period of the curriculum and absorption of a larger proportion of their time in actual contact with human beings and by methods which will lead to the appreciation of the fact that they are human.

Teaching Medical Economics.—From experience with practicing physicians in their consideration of economic problems, Lytle believes that medical schools owe it to their students at least to acquaint them with an outline of medical economics. He outlines his course of teaching in detail.

Training for Conferences.—Miner outlines an experiment in teaching at the University of Kentucky. The course is entitled Conferences on Life Interests.

Woman as Medical Student.—Women compose approximately 6.2 per cent of the graduating classes of the University of Michigan Medical School. Seventy-six per cent of these women and 40.2 per cent of the men have received their premedical education in institutions other than the University of Michigan. Eighty-four and eight-tenths per cent of the women and 44.1 per cent of the men have presented bachelor degrees for entrance. Practically as many women (73.8 per cent) graduate from medicine in proportion to those entering medicine as male students (76.8 per cent). Curtis asserts that female students in medicine do better work the first two years than do men, and their work the last two years is about equal to the male students' work. The average woman student in medicine is numerically about 10 per cent better student than the average male student. Students, both male and female, do better if they have received enough premedical preparation to award them a literary degree.

California and Western Medicine, San Francisco

26: 145-288 (Feb.) 1927

Outlook for Diabetic. E. P. Joslin, Boston.—p. 177.
*Prenatal Care in California. A. Brown, San Francisco.—p. 182.
Histology and Mortality in Tumors of Prostate, Bladder and Kidney. A. J. Scholl, Los Angeles.—p. 185.
*Volvulus of Entire Small Intestine with Torsion of Mesentery. T. C. Lawson, Oakland, Calif.—p. 189.
Use of Liver. L. E. Mahoney, Santa Monica, Calif.—p. 192.
*Tricuspid Disease. W. J. Kerr and L. F. Morrison, San Francisco.—p. 193.
*Effect of Gastric Juice on Carbohydrate Decomposition by Yeast. R. G. Bramkamp, Stanford University, Calif.—p. 196.
*Bismuth Treatment of Syphilis. I. C. Sutton, Hollywood, Calif.—p. 197.
*Diagnosis of Suprarenal Tumors. T. E. Gibson, San Francisco.—p. 201.
*New Family Group of Hereditary and Spastic Ataxia: Duration in California. H. C. Naffziger and H. C. Shepardson, San Francisco.—p. 207.
Clinical Thermometer Tip in Bronchus. W. B. Smith, San Francisco.—p. 209.
Swallowing Full-Sized Toothbrush. C. A. Johnson, Los Angeles.—p. 210.
*Absorption of Subcutaneous Fat Deposits at Site of Repeated Insulin Injections. R. A. Davison, San Francisco.—p. 210.
Fatty Atrophy from Injections of Insulin. S. H. Mentzer and E. S. duBray, San Francisco.—p. 212.

Prenatal Care in California.—As a result of prenatal care given in California, Brown cites these figures: The maternal mortality rate per thousand live births in 1920 in California was 7.1, and per thousand total births, including stillbirths, was 6.8. In 1924, there were 5.2 per thousand live births, and 5.1 per thousand total births, including stillbirths. This means, as there were 86,900 births in 1924, a saving of 185 mothers.

Volvulus of Small Intestine with Torsion of Mesentery.—In the case cited by Lawson the small intestine was involved in a massive volvulus with torsion of the mesentery, counterclockwise, for two complete turns, or 720 degrees. The intestine involved included all that from 1½ inches below the duodenal-jejunal juncture to within 2 inches of the ileocecal valve. The dorsal attachment of the mesentery to the small intestine was only 1 inch in length, just enough to contain the superior mesenteric vessels. The small intestine was dilated and brownish purple, with evidence of beginning gangrene. The mesenteric and colic veins were markedly dilated. The large intestine at the splenic flexure was found doubled up on itself and bound down with adhesions. The descending colon was collapsed and descended from the splenic flexure for about 8 inches, when it became bound with adhesions, and curved upward and medially for 5 inches and then descended just to the left of the vertebral column to the rectum.

Tricuspid Disease.—During a ten year period Kerr and Morrison have diagnosed ninety-five cases of tricuspid insufficiency during life. In twelve cases out of twenty-five coming to postmortem examination the tricuspid valve was found to be the seat of endocarditis, but in only three of these twelve cases was the condition recognized during life. In other cases in which tricuspid endocarditis has been suspected, there has not been an opportunity to examine the heart after death.

Effect of Gastric Juice on Carbohydrate Decomposition by Yeast.—The effect of gastric juice on the alcoholic fermentation of dextrose by yeast in vitro has been determined by Bramkamp. There is a direct relation between the acidity of the juice and the inhibition of the fermentation. At a concentration of hydrochloric acid of 0.12 per cent, the action of the yeast is very slight. At the usual acidity in vivo there may safely be said not to be an appreciable carbohydrate decomposition. The factor almost wholly concerned with the inhibition is the free hydrochloric acid of the gastric juice.

Bismuth Treatment of Syphilis.—In Sutton's opinion the main field of bismuth treatment is in those patients who cannot have arsenic because of an allergic type of response to it. Bismuth cannot be said to have dethroned arsenic as a remedy for syphilis, but it is a good substitute. It undoubtedly is a powerful resistance builder.

Suprarenal Tumors.—Of nine cases of so-called suprarenal tumors reviewed by Gibson, only four were proved to be primary. The remaining five were probably secondary.

Hereditary Ataxia.—Naffziger and Shepardson report on eighteen cases of ataxia occurring in four generations. One case is reported in detail. The patient's grandfather was ataxic, several sisters were ataxic and some of their children were ataxic. The patient's mother had the disease. She had fourteen children, of whom the patient was one. Two died in infancy.

Effect of Insulin Injection on Subcutaneous Fat.—Davison reports a case of diabetes in which the injection of insulin was followed by loss of subcutaneous fat at the site of injection. In from twenty-four to thirty hours following the injection, there appeared at the site a circular indurated area surrounded by an area of erythema which gradually increased in size to a diameter of from 10 to 12 cm. over a period of three or four days, and then gradually subsided. Itching and burning continued during this period. About four months later the patient began to notice a pulling of the skin with loss of subcutaneous fat in these areas.

Journal of Clinical Investigation, Baltimore

3: 465-659 (Feb. 20) 1927

Epidemic Prevalence in Light of Experimental Findings. L. T. Webster, New York.—p. 465.
Measuring Roentgenograms of Cardiac Areas of Dogs. H. J. Stewart, New York.—p. 475.
*Effect of Tachycardia on Size of Heart. H. J. Stewart and J. H. Crawford, New York.—p. 483.
*Plasma Proteins and Blood Hydration: III. Malnutrition. J. P. Peters, A. M. Wakeman and A. J. Eisenman, New Haven, Conn.—p. 491.
Total Acid-Base Equilibrium of Plasma in Health and Disease: VIII. Bicarbonate and Chloride in Serum of Patients with Heart Failure. J. P. Peters, H. A. Bulger and A. J. Eisenman, New Haven, Conn. —p. 497.
*Id.: IX. High Serum Bicarbonate in Heart Failure: Asphyctic Anoxemia. J. P. Peters, H. A. Bulger and A. J. Eisenman, New Haven, Conn.—p. 511.
*Digitalis and Diuretics in Heart Failure with Regular Rhythm: Etiologic Classification of Heart Disease. H. M. Marvin, New Haven, Conn.—p. 521.
Red Blood Cell Diameter: II. In Pernicious Anemia and in Myelogenous Leukemia. D. N. Medearis and G. R. Minot, Boston.—p. 541.
Mechanism of Action of Hydrogen Ion on Cardiac Rhythm. E. C. Andrus and E. P. Carter, Baltimore.—p. 555.
*Epinephrine Reaction in Obesity. C. I. Krantz and J. H. Means, Boston. —p. 565.
*Edema: II. Effectiveness of Ultrafiltration for Quantitatively Determining "Free Water" Content of Blood Plasma, and for Estimating Physical-Chemical Changes of Plasma Proteins in Edema. M. M. Kunde, Chicago.—p. 577.
*Form of Electrocardiogram and Site of Stimulation of Ventricles. B. S. Oppenheimer and H. J. Stewart, New York.—p. 593.
*Variations in Blood Flow with Changes in Position in Normal and Pathologic Subjects. J. S. Lawrence, L. M. Hurxthal and A. V. Bock, Boston.—p. 613.
*Study of Rotatory and Reducing Properties of Ultrafiltrates from Blood Plasma. J. R. Paul, Philadelphia.—p. 631.

Effect of Tachycardia on Size of Heart.—Stewart and Crawford observed the effect of tachycardia on the size of the roentgen-ray shadow of the heart in normal unanesthetized dogs. They found that during regular tachycardia a decrease in the size of the heart occurs. During irregular tachycardia (auricular fibrillation), the size of the heart is unchanged or is increased.

Plasma Proteins and Blood Hydration.—Low plasma proteins were found consistently by Peters et al. in patients who, from a variety of causes, developed severe malnutrition. It is suggested that reduction of the plasma proteins in persons without obvious cardiac disease, or nephritis of the types associated with hypertension and uremia, is an indication of previous protein starvation and at least a contributory cause of cachectic and starvation edemas.

Asphyctic Anoxemia.—Peters et al. assert that cardiac patients with high bicarbonate regularly present evidences of pathologic changes in the lungs which interfere with the proper ventilation of the blood, and deficient oxygenation of the arterial blood. It is suggested that high bicarbonate and low chloride is the typical result of conditions that produce anoxic anoxemia and, at the same time, interfere with the discharge of carbon dioxide from the pulmonary circulation. To this condition the term "asphyctic" anoxemia has been applied, to distinguish it from the anoxemia produced by reduction of oxygen tension in the inspired air which leads to overventilation, bicarbonate deficiency and hyperchloremia.

Digitalis and Diuretics in Heart Failure.—The administration of digitalis in suitable large doses under properly controlled conditions, to patients with advanced congestive heart failure, regular rhythm and considerable edema, appears to cause improvement consistently in only one group—the group designated by Marvin "arteriosclerotic heart disease," but frequently referred to as "chronic myocarditis" or "myocardial insufficiency." The drug has been found occasionally beneficial in patients with syphilitic heart disease, but almost devoid of effect in rheumatic heart disease. The same differences have been noted with regard to the effectiveness of diuretic drugs administered after complete digitalization. Persons with rheumatic heart disease seldom show satisfactory diuresis; those with arteriosclerotic heart disease, as a rule, respond in a highly favorable manner. It is suggested that differences of opinion concerning the effect of digitalis in heart failure with normal rhythm may depend in part on differences in the patients selected for treatment. It is believed that a division of patients on the basis of the etiology of the heart disease is essential for the proper correlation of the results of different observers.

Epinephrine Reaction in Obesity.—The characteristic increase in total metabolism, pulmonary ventilation and pulse pressure following epinephrine injection was found by Krantz and Means not to be of a significantly different magnitude in the obese than in persons of normal weight. The respiratory quotient, on the other hand, seemed to rise definitely less in obese persons than in normal persons after epinephrine. The pulse showed more acceleration in the obese than in normal persons.

Plasma Colloids and Edema.—Kunde failed to find in her research evidence either supporting or refuting the theory that swelling or shrinking of the plasma colloids may occur to a degree sufficient to influence the free water content of the blood plasma in patients with and without edema.

Form of Electrocardiogram and Site of Stimulation of Ventricles.—From a patient in whom it was possible to stimulate the ventricles of the heart mechanically, Oppenheimer and Stewart obtained electrocardiograms of artificially induced ventricular premature contractions. The premature contractions fall into three groups on the basis of their form: those having upward deflections in lead III, those having downward deflections in lead III, and those having diphasic deflections in lead III. Although it is not possible to identify which portions of the ventricles lay beneath all the points stimulated, the authors are nevertheless reasonably certain that when a point definitely over the right ventricle was stimulated the spiked deflections in the electrocardiogram of the premature contractions were upright in lead III (VPCR), and inverted when the point stimulated was over the left ventricle (VPCL). To retain the terminology which is in current use seems therefore justified. To consider ventricular premature contractions, the main deflections of which are upright in lead III, as originating in the right ventricle, and those, the first main deflections of which are inverted in lead III, as originating in the left ventricle, is also justified.

Variations in Blood Flow.—Lawrence and his associates assert that in normal subjects the blood flow, pulse pressure and tension of carbon dioxide in alveolar and mixed venous air samples diminish as one changes from the lying to the sitting or standing postures. In normal subjects the ventilation, metabolic rate, pulse rate, vital capacity and difference in tension between carbon dioxide in alveolar and mixed venous air samples increase from the lying to the sitting or standing positions. In subjects showing pathologic conditions, responses different from the normal may be obtained in some instances.

Levorotatory Substances in Normal Blood.—The evidence brought forward by Paul confirms the presence, often noted by others, of levorotatory substances in normal blood, and suggests that changes in these optically active substances other than glucose, whatever their nature may be, are largely

responsible for the fluctuations of the rotatory values observed under the conditions of these experiments in ultrafiltrates from plasma.

Journal of Immunology, Baltimore

13: 79-169 (Feb.) 1927

Serologic Classification of B. Botulinus: III. Complement Fixation Reaction. J. B. Gunnison and P. Schoenholz, San Francisco.—p. 79.
*Specific Hypersensitiveness: XXVII. Dermatitis Venenata: Use of Modified Extract from Toxicodendron Radicans (L). W. C. Spain and R. A. Cooke, New York.—p. 93.
Reaction for Detecting Binding of Agglutinins by Difficultly Agglutinable Suspensions. S. Mudd, Philadelphia.—p. 113.
*Cocto-Immunogen of Dysentery Bacillus (Shiga Type). R. Torikata and A. Fujimoto, Kyoto, Japan.—p. 123.
*Alcohol Soluble Specific Substances of B. Diphtheriae and Streptothrix. J. Freund, Asheville, N. C.—p. 161.

Experimental Immunity to Ivy Poisoning.—Spain and Cooke have succeeded in developing a satisfactory degree of clinical immunity to ivy poisoning by the oral or hypodermic administration, in proper amounts, of the active principle of *Toxicodendron radicans*. The injection method of treatment is preferable, since the conditions surrounding it can be kept more fully under control than in the case of oral administration.

Cocto-Immunogen of Dysentery Bacillus.—Experimental results reported by Torikata and Fujimoto favor the theory of cocto-immunogen of the Shiga dysentery bacillus of Torikata. Dysentery vaccine is too strong to be used for immunizing either human beings or laboratory animals. Cocto-immunogen can be used well for this purpose.

Specific Substances of Diphtheria Bacillus and Streptothrix.—An alcohol soluble specific substance was demonstrated by Freund in a streptothrix strain. The unit for the complement fixation test in a nonpurified preparation was 0.0006 mg. The addition of an alcoholic solution of lecithin to the alcoholic extract of streptothrix increases its potency in the complement fixation test 200 times in a mixture containing 2 per cent alcoholic extract. An alcohol soluble specific substance could not be demonstrated in the case of *Bacillus xerosis*, of *Trychophyton*, *Actinomyces* and yeast. The antigens of the bacterial suspension and the alcoholic extract of the diphtheria strain could not be differentiated in absorption experiments. The alcohol soluble specific substance of *Bacillus diphtheriae* is soluble in methyl alcohol, acetone and weak alkali; insoluble in ether, weak acids and water. The unit for the complement fixation test in the purified preparation was from 0.00035 to 0.00045 mg. The addition of an alcoholic solution of lecithin to the alcoholic extract of *Bacillus diphtheriae* increases its potency in the complement fixation test four times. The solubility of this specific substance makes its protein nature improbable.

New Jersey Medical Society Journal, Orange

24: 77-152 (Feb.) 1927

Clinical Interpretation of Spinal Fluid Examinations. R. A. Kilduffe, Atlantic City.—p. 77.
Treatment of Syphilis. A. J. Casselman, Camden.—p. 86.
Cecal Stasis: Complication of Chronic Appendicitis. G. H. Lathrope, Newark.—p. 91.
Significance and Treatment of Pain About Heart. G. H. Wells, Philadelphia.—p. 93.
Hypertension. F. C. Roberts, Easton, Pa.—p. 97.
Blood Pressure as Therapeutic Guide in Cardiovascular Renal Disease. C. L. Andrews, Atlantic City.—p. 100.
Injuries to Lower Spine and Pelvis. J. N. Bassin, Long Island.—p. 106.

Southern Medical Journal, Birmingham, Ala.

20: 85-170 (Feb.) 1927

Critical Factors in Surgery of Gallbladder and Ducts. G. W. Crile, Cleveland.—p. 85.
Surgery of Gallbladder. I. Abell, Louisville, Ky.—p. 89.
*Relation of Syphilis to Aneurysms. S. Graves, Louisville, Ky.—p. 92.
*Determination of Relapse in Amebic Infections. F. M. Johns, New Orleans.—p. 96.
Fundamental Consideration in Psychiatry. R. M. Chapman, Towson, Md.—p. 99.
Osteomyelitis of Pelvis. E. L. Scott, Birmingham.—p. 104.
Onlay Graft in Treatment of Ununited Fractures of Long Bones. W. Campbell, Memphis, Tenn.—p. 107.
Physician and Venereal Disease Problem in 1926. W. F. Snow and W. M. Burnet, New York.—p. 114.
Cancer of Larynx. R. C. Lynch, New Orleans.—p. 119.
*Torula Infection of Nasopharynx. E. L. Jones, Wheeling, W. Va.—p. 120.
Roentgen-Ray Findings in Chests of Asthma Patients W. F. Manges and S. J. Hawley, Philadelphia.—p. 126.
Use of Iodized Oil in Chest Diagnosis. J. J. Singer and S. Moore, St. Louis.—p. 134.
Dermatoses. A. B. Cannon, New York.—p. 141.
*Comparison of Kolmer Modified Wassermann Test with Kahn Test. W. Litterer, Nashville, Tenn.—p. 147.
Malnutrition in Older Children. L. T. Royster, University, Va.—p. 151.
*Roentgen-Ray Pleuropneumonitis. T. A. Groover, A. C. Christie, E. A. Merritt and F. O. Coe, Washington, D. C.—p. 153.
Rôle of Focal Infection in Causation of Gastro-Intestinal Disease. J. L. Jelks, Memphis, Tenn.—p. 158.
Proper Relation Between Health Officer and Physician. F. J. Underwood, Jackson, Miss.—p. 161.
*Thoracic Syndrome Accompanying Increase of Abdominal Pressure. J. B. Guthrie, New Orleans.—p. 164.

Relation of Syphilis to Aneurysms.—In 1,595 necropsies, Graves says there occurred forty-five aneurysms—in the arch in 49 per cent, in the descending thoracic aorta in 24 per cent and in the abdominal aorta in 15.5 per cent. Saccular aneurysms were found in 94 per cent of the series, single ones in 77 per cent and multiple ones in 17 per cent. Forty-six and six tenths per cent of the aneurysms eventually ruptured, most commonly into the pericardial cavity; almost as many times into the retroperitoneal structures, and next most commonly into a pleural cavity.

Diagnosis of Amebiasis.—Johns has not been able to obtain any confirmation of Kofoid's so-called excretion of encysted amebas from his known amebic abscessed liver cases by examination of the duodenal contents; he does not believe that at the present time one should go afield and diagnose amebiasis on phantom forms the size of yeast cells obtained by duodenal drainage.

Torula Infection of Nasopharynx.—Jones reports a case of a destructive lesion in the palate and nasopharynx due to the yeast torula.

Comparison of Kolmer and Kahn Tests.—In 25,000 serums tested by Litterer, there was an agreement of 94.7 per cent between the Kolmer modified Wassermann test and the Kahn test.

Roentgen-Ray Pleuropneumonitis.—Groover et al. have observed two cases presenting permanent pleuropulmonary changes, which they believe to have been caused by roentgen rays, in which spontaneous fractures of several ribs occurred three and four years, respectively, after exposure. They are convinced the occurrence of roentgen-ray pleuropneumonitis is not by any means a remote possibility under present-day methods of technic. The possibility of its occurrence is an added reason for caution with respect to dosage and repetition of treatments.

Thoracic Symptoms of Increased Intra-Abdominal Pressure.—Guthrie has demonstrated a few characteristic points, useful in physical diagnosis of the chest, which occur in conditions in which, through increase of abdominal pressure, the diaphragm is pushed upward and inside the thorax from any cause within the abdomen: 1. The left half of the diaphragm is more freely movable than the right, and as intra-abdominal pressure is increased it is carried upward. 2. The apex of the heart moves with the diaphragm and often a diameter of one whole intercostal space is traversed. 3. The Kroenig area is diminished on the left side during moderate general abdominal compression. The right Kroenig area is then practically unchanged. 4. The transverse diameter of the vessels at the base of the heart is increased by increase of abdominal pressure. 5. Normally, the posterior and inferior boundary of lung resonance lies at or near the level of the tenth thoracic spine on the left and at the ninth thoracic spine on the right. When abdominal pressure is increased to a certain point, the left base is found higher than the right. 6. The external boundary of the Kroenig area posteriorly, which rests normally on the tubercle of the spine of the scapula on both sides, moves inward from the tubercle several centimeters, proportionate to the degree of the pressure.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

49: 437-607 (Dec.) 1926

*Pituitary Adamantinoma. M. Critchley and R. N. Ironside.—p. 437.
*Vestibular or Labyrinthine Epidemic Encephalitis. R. I. Poston.—p. 482.
*Anatomopathologic Basis of Parkinsonian Syndrome Following Epidemic Encephalitis. D. McAlpine.—p. 525.
*Experimental Stimulation of Cerebellum. R. H. Clarke.—p. 557.

Pituitary Adamantinoma.—The main clinical and pathologic features of this group of tumors are discussed by Critchley and Ironside, and seven new cases are reported. Eleven cases already on record are reviewed.

Vestibular Involvement in Epidemic Encephalitis.—Poston asserts that there is in epidemic encephalitis a definite disturbance of the vestibular apparatus and its connections, which may give rise to errors in equilibration, spontaneous nystagmus, abnormal induced nystagmus, or abnormal Babinski-Weill reactions. This syndrome may occur alone, or with symptoms, pointing to involvement of adjacent or connected nuclei, or with symptoms which indicate involvement of putamen and globus pallidus, such as tremor, rigidity and myoclonus. The syndrome may be present at the onset, or during the acute stages of the illness, or it may persist as a residuum.

Microscopic Changes of Parkinsonian Syndrome.—The histologic conditions in eight cases of parkinsonism are described by McAlpine. From a study of these cases, it would appear that the only group of cells which is constantly affected in this disease is that of the substantia nigra. Subacute inflammatory changes were present in all the cases, being especially marked in the midbrain, even when the duration of the illness had exceeded twelve months. The persistence of the infective process would explain the latent period that may occur in some cases between the initial illness and the onset of parkinsonism, it being supposed that the substantia nigra was little affected in the first instance. Gliosis in the region of the substantia nigra was especially marked in areas denuded of cells. It was also apparent, though in less degree, in the periaqueductal gray matter. The basal ganglions, and in particular the globus pallidus, did not show any noteworthy changes. The locus ceruleus was markedly affected on one side in three of the cases. The normal cells of this nucleus do not resemble those of the substantia nigra, except in regard to the pigment, being much rounder; presumably, therefore, these nuclei differ in their functional activity. This would suggest that a lesion of the locus ceruleus does not result in any of the motor phenomena characteristic of the parkinsonian syndrome, but that it might be responsible for some of the symptoms attributed to the vegetative system.

Experimental Stimulation of Cerebellum.—The chief conclusions drawn by Clarke from his experiments are that: 1. The cortex of the cerebellum is inexcitable, in the sense of originating impulses that act directly on particular groups of muscles. 2. The only part of the cerebellum sensitive to electrical stimulation is the region of the central nuclei and the floor of the fourth ventricle, but the reactions obtained from here are due to the spread of the electrical current to neighboring bulbar and mesencephalic structures, or to its conduction by the paths of least resistance to parts of the nervous system with which the cerebellum is closely connected. The most frequent responses to stimulation of the cerebellum in all the animals employed were movements of the head and eyes. This was often a conjugate movement, but it may be of the head only, or of the eyes only, or of only one eye. It was generally to the same side, but sometimes to the other, and all movements of the eyes may be observed occasionally. These movements do not, however, resemble those due to the direct response of a motor center to a stimulus; they are slower and more deliberate, and are probably secondary effects of impulses conveyed to the brain stem.

British Journal of Radiology, London

32: 1-40 (Jan.) 1927

Contrast and Fog in Radiography. B. E. Luboshez.—p. 1.
Internal Pelvimetry by Roentgen Rays. R. E. Roberts.—p. 11.
Case of Thoracic Stomach. R. E. Roberts.—p. 17.
Cholecystography. A. B. MacLean.—p. 19.

Journal of Obstetrics and Gynæcology of British Empire, Manchester

33: 563-745 (Winter) 1926

Diabetes and Pregnancy. C. G. Lambie.—p. 563.
Pathology and Causation of Dysmenorrhea. B. Whitehouse.—p. 607.
*Endometrial Tumors of Laparatomy Scars. G. W. Nicholson.—p. 620.
Why Has Teaching of Midwifery Been So Inefficient? C. Berkeley.—p. 634.
Material and Methods of Gynecologic and Obstetric Clinic. W. B. Bell.—p. 642.
*Hemorrhage from Nongravid Uterus Following Trauma. D. M. Lindsay.—p. 648.
*Two Cases of Precocious Puberty. G. F. Keatinge.—p. 653.
*Endometrial Tumor of Laparotomy Scar. C. Berkeley.—p. 657.
*Case in Which Endometrial Tissue Was Accidently Implanted. V. Bonney.—p. 658.
Celluloid Jars for Mounting Permanent Specimens. D. H. Douglas.—p. 660.

Endometrial Tumors in Laparotomy Scar.—Nicholson concludes that endometrial tumors are acquired accessory uteri. Of the theories which attempt to explain them, the "peritoneal" is the most generally applicable, and its acceptance offers the fewest difficulties. It alone agrees with biologic facts. It has been suggested that desmoid tumors of the abdominal wall are in reality endometriomas. Nicholson regards these tumors as fibrosarcomas that have the peculiarity of at first appearing as fibromas and recurring from time after time as more malignant sarcomas. They are equally common in the two sexes, do not have connection with a scar, and have nothing to do with endometrial tumors.

Traumatic Hemorrhage from Nongravid Uterus.—Lindsay is of the opinion that uterine hemorrhage may result from injury to an ovary, a corpus luteum or a graafian follicle. The ovary, despite its apparently well protected site on the posterior surface of the broad ligament, may suffer trauma as the result of externally applied violence. Ovarian hematomas may be found in the ovarian stroma, or in an already formed space, such as a corpus luteum or graafian follicle, and Lindsay is in agreement with Haig Ferguson that they may be due to such stimuli as a cough, heavy lifting or handling during operation. Cases are cited.

Precocious Puberty.—One of Keatinge's patients was 7 years of age. She had been menstruating regularly since six months previously. The child was well developed. On rectal and abdominal examination, a cyst of the left ovary of about the size of a tennis ball could be felt. The uterus was of the adult type, not enlarged and in good position. Roentgen-ray examination of the skull did not show any indications of tumor formation or other abnormality. The cyst of the ovary was removed, together with the greater part of the ovary. The cyst was a so-called dermoid. The girl has not menstruated since the removal of the ovarian cyst. Within six months after leaving the hospital, the secondary sex characteristics had completely disappeared. The second patient was 3½ years of age. She began to menstruate at 1 month. Pubic hair was present by the end of the first year. The breasts were well formed. On abdominal and rectal examination, a small ovarian cyst of the size of a hazelnut was discovered on the right side. The cyst was removed with a considerable part of the ovary. The child has not shown any improvement since the operation. Menstruation takes place regularly as before; the secondary sex characteristics remain.

Endometrioma in Laparotomy Scar.—Berkeley cites the case of a woman, aged 30, on whom a cesarean section had been performed. About three years later, a small lump appeared at the lower end of the abdominal scar. The tumor gradually increased in size and was always painful, especially when the patient was menstruating. The tumor was excised. The appearance of the stroma and glandular elements resembled closely that of the endometrium.

Accidental Implantation of Endometrial Tissue.—Bonney operated on a woman, aged 29, who suffered from persistent menorrhagia. The abdomen was opened by a transverse skin incision in the pubic hair area, and a vertical one through the fascia, muscles and peritoneum. The uterus was somewhat undersized. Bonney opened its cavity through an incision in its anterior wall, in the hope of finding a polypus or small fibroid. Nothing, however, beyond a thickened endometrium was found, and this was curetted away with the blunt end of a scalpel. The wound in the uterine wall was closed, the round ligaments shortened and the abdominal incision sewed up. Within a year of the operation, a swelling developed under the skin of the mons veneris, just below the line of the abdominal incision, and the patient stated that it temporarily increased in size and became painful with every menstrual period. The tumor was excised. Sections of it presented the appearance typical of an endometrioma, with well developed islands of stroma containing well formed uterine glands. Bonney is convinced that this was a case of implantation of endometrium due to failure to cover the wound edges during the operation. He suggests the possibility that many of the so-called postoperative desmoid tumors of the abdominal wall, which have been described in the past, were really endometrioma, due to accidental implantation.

Journal of Physiology, London

62: 129-210 (Dec. 10) 1926

*Effect on Platelets and on Blood Coagulation of Injecting Foreign Particles into Blood Stream. J. Tait and A. R. Elvidge.—p. 129.
*Internal Secretions of Ovary: II. Effects of Injection of Estrus-Producing Hormone During Pregnancy. A. S. Parkes and C. W. Bellerby.—p. 145.
Myothermic Observations on Dogfish. A. V. Hill.—p. 156.
Antagonism of Acetyl Choline by Methylene Blue. R. P. Cook.—p. 160.
*Chemical Regulation of Capillary Tone. A. Hemingway and R. J. S. McDowall.—p. 166.
*Rôle of Phosphates in Carbohydrate Metabolism in Skeletal Muscle: II. Comparison Between Muscles of Normal, Fatigued and Depancreatized Animals. F. Beattie and T. H. Milroy.—p. 174.
*Regeneration of Blood After Hemorrhage. D. T. Barry and D. S. Torrens.—p. 192.
*Innervation and Secretory Path of Thyroid. C. S. Hicks.—p. 198.
Anaerobic Delayed Heat Production in Muscle. K. Furusawa and W. Hartree.—p. 203.

Effect of Injection of Foreign Particles into Blood Stream.—It was found by Tait and Elvidge that an intravascular injection, even of coarse particles, does not necessarily determine thrombosis. Addition of coarse particles to paraffin-held, drawn blood, by causing cytolysis of thrombocytes, eventually causes coagulation. Addition of an adequate quantity of fine particles to the drawn blood of the frog similarly causes coagulation, while addition of a smaller quantity of fine particles does not. As the result of an intravascular injection of particles, a fall in the number of circulating platelets occurs. After a heavy injection the fall is profound (though complete disappearance was never observed), and some days must elapse before the previous number is restored. With injection of a smaller amount, the fall in number of platelets is less, and the time for recovery of the initial number is shorter. By repetitions of the injections at intervals less than the time necessary for recovery, the number of circulating platelets can be kept low. The admixture of particles with the circulating blood, while failing to cause thrombosis, nevertheless effects a transformation of fibrinogen into fibrin. The reason why thrombosis does not occur is that the particular conditions of formation of the fibrin allow of a successful reply on the part of the natural "antithrombotic mechanism" of the circulation.

Effect of Injection of Estrus-Producing Hormone During Pregnancy.—Parkes and Bellerby assert that the injection of estrus-producing hormone during the early stages of pregnancy invariably causes the rapid reappearance of estrus and the termination of the pregnancy. During the later stages of pregnancy, injection of sufficient amounts will nearly always terminate the pregnancy, but the amount required is much greater (about twice as much). When litters are born after injection of the mother during the later stages of pregnancy, abnormality in sex differentiation does not occur in the males, and estrous symptoms are not observed in the females.

Chemical Regulation of Capillary Tone.—Experiments are described by Hemingway and McDowall which show that the maintenance of capillary tone, as demonstrated by the response of these vessels to histamine, is under the control of a simple acid-base equilibrium.

Carbohydrate Metabolism of Muscle.—From a study made by Beattie and Milroy of the existing condition in muscle, the carbohydrate mechanism appears to be a very stable one. The resistance offered to depletion of the glycogen store and the maintenance of the phosphate, organic and inorganic, at such a constant level indicate that reversible processes play important parts in the transformations.

Regeneration of Blood After Hemorrhage.—Barry and Torrens performed some experiments on dogs to determine whether or not the regeneration of blood after hemorrhage is stimulated by the use of fresh liver substance from a separate animal. Nine dogs were bled to the extent of 3 per cent of the body weight, and given one injection of liver extract intravenously or intraperitoneally. No appreciable differences were noted in their blood from that of the controls in the course of recovery. Three dogs were bled to the same extent and treated by grafting liver substance in the subcutaneous tissue of the neck. Two of these developed sepsis and did not show any improved regeneration of hemoglobin as compared with controls. In the third animal the wound healed by first intention, and it showed better regeneration of hemoglobin than did the control. Barry and Torrens suggest that this experiment lends a little support to the theory that the liver possesses the property of stimulating hemogenesis.

Secretory Path of Thyroid.—Secretion of thyreoglobulin into blood and lymph has been studied by Hicks in dogs with normal thyroids. It would appear from his results that thyreoglobulin finds its way more by the blood stream than by the lymphatics, the rate of flow in the latter being very slow compared with that of the blood in the veins, and the concentration being of the same order in the two. A conclusion cannot be drawn as to the effect of possible secretory fibers in the sympathetic nerve supply to the thyroid, although it might be urged that the effect might be slower than the nature of the experiment could detect. These results confirm those of Carlson, Hektoen and Schulhof. Administration of iodine appears to increase the flow of lymph from the apical lymphatics of the thyroid gland, as well as to increase the content of thyreoglobulin therein.

Acta Dermatologica, Kyoto, Japan

8: 775-889 (Dec.) 1926

*Osmidrosis Axillaris. S. Ishikawa and A. Nohira.—p. 775.
Immunologic Study of Frambesia. "Superinfection." Y. Ikegami.—p. 789.
Serochemical Studies on Tissue Extracts Administered Parenterally: III. Effect of Residual Nitrogen. K. Fujita.—p. 819.
Id.: IV. Effect of Blood Catalase of Hemoglobins and Blood Residual Nitrogen. K. Fujita.—p. 843.

Osmidrosis Axillaris.—In the Orient, especially in Japan, according to Ishikawa and Nohira, osmidrosis axillaris is an unusual skin condition, which begins to manifest itself at puberty and which bears some relation to sexual maturity. In the axillary region of twenty-seven persons, comprising seven healthy individuals, one case of hyperhidrosis axillaris without offensive odor, and nineteen cases of osmidrosis axillaris, there were two types of sweat glands; namely, "apocrine" and "eccrine" glands. In the cases of osmidrosis axillaris, the "eccrine" glands did not present any difference, whereas there were about twice as many "apocrine" glands, which also were larger than those of the healthy individuals. The conclusion drawn is that osmidrosis axillaris is produced at least partly by an abnormal development of the "apocrine" glands in the axillary region, while such an abnormality is never recognizable in cases of bromidrosis and osmidrosis from other causes.

Bulletins de la Société Médicale des Hôpitaux, Paris

51: 37-58 (Jan. 27) 1927

Staphylococcus Infection of the Lower Lip. J. Rouillard and P. Barreau.—p. 37.
Melancholia Associated with Vitiligo. C. J. Parhon and M. Désévici.—p. 39.
Clinical Complications of Cancer. M. Renaud.—p. 43.
*Tuberculosis of the Spleen and Polycythemia. A. Coyon et al.—p. 48.
Amauroses from Gastro-Intestinal Hemorrhage. A. Coyon et al.—p. 53.

Case of Tuberculosis of the Spleen with Polycythemia.—Polycythemia and erythrosis of the face were present in a man, aged 56, affected with primary tuberculosis of the spleen. The number of normoblasts in the blood was increased, while that of leukoblasts remained normal. The dissociated erythroblastic reaction is considered by Coyon, Clog and Brun as one of the factors of polycythemia. The close correlation existing between the hematopoietic organs explains why a lesion of the spleen causes hyperfunction of the bone marrow with consequent polycythemia.

51: 59-100 (Feb. 3) 1927

Acromegaly in a Syphilitic Patient. Laignel-Lavastine and Morlaas.—p. 60.
Relations Between Hemorrhagic Meningo-Encephalitis and Epidemic Encephalitis. P. Lechelle and T. Alajouanine.—p. 68.
*Mechanism Regulating Alkali Reserve. L. Ambard et al.—p. 75.
*Mechanism of Dry Chloride Retention. L. Ambard and F. Schmid.—p. 82.
*Necropsy in a Case of Rebellious Hiccup. C. I. Urechia and S. Mihalescu.—p. 87.
Lymphoid Leukemia Without Enlargement of the Spleen. C. Aubertin.—p. 89.
Discovery of Pulmonary Abscess by the Roentgen Ray. F. Bezançon et al.—p. 92.
Abscess of the Lung Treated with Autovaccine. F. Bezançon et al.—p. 94.

Mechanism Regulating the Alkali Reserve.—Ambard, Schmid and Arnovlyévitch's observation was conducted on a woman with uncontrollable vomiting. The secretion of urine was deficient. About 0.24 per cent of urea was found in the blood, 0.84 per cent in the urine. The alkali reserve was considerably increased. On the other hand, there was acidosis, revealed by high azotemia. Coexistence of acidosis with an increased alkali reserve could be explained only by the considerable reduction of sodium chloride found in the blood. This observation contradicts the theory that lowering of the alkali reserve results from neutralization of sodium bicarbonate by an excess of acids in the organism. In uremia a salt free diet does not reduce the renal impermeability. Thus the amount of acids remains high in the body fluids. The rise of the alkali reserve in this case was evidently due to another cause than diminished neutralization of bicarbonates. Nor can decrease of the alkali reserve with a diet containing salt be explained by enhanced neutralization of bicarbonates. Factors intervening in the regulation of the alkali reserve are equilibrium between the amount of bicarbonates and that of carbon dioxide in the blood. This equilibrium is maintained by the renal secretion. The action of hydrochloric acid, retained in the respiratory centers, on pulmonary ventilation, is another regulating factor.

Etiology of Dry Chloride Retention.—Ambard and Schmid describe experiments evidencing the presence of hydrochloric acid in red blood corpuscles. Retention of hydrochloric acid in albumins of all the tissues of the body appears to be unquestionable. In dry chloride retention, the amount of the acid is increased. In nephritis with azotemia and albuminuria impermeability of the kidneys is responsible for increase of acids in the blood and for accumulation of hydrochloric acid in the tissue albumins. Increase of sodium chloride in the blood enhances the effect of the acidosis. Increase of hydrochloric acid in all the tissues explains why the signs of dry chloride retention may be multiple and why the accompanying nervous phenomena are of the irritation type, such as hyperventilation of the lung, hypertension, eclamptic convulsions, etc. In dry chloride retention a salt-restricted diet is beneficial, since it augments the alkali reserve.

Necropsy in a Case of Rebellious Hiccup.—Urechia and Mihalescu treated a man, aged 54, suffering from cancer of the pylorus, acidosis and hiccup. The latter persisted for twelve days. At necropsy capillary hemorrhages and cellular lesions were found in the gray substance of the cervical portion of the spinal cord, at the site of the phrenic center. This observation agrees with those made by other authors on epidemic hiccup. There were also changes in the periventricular nucleus of the tuber cinereum, explaining the acidosis.

Comptes Rendus de la Société de Biologie, Paris

95: 1521-1616 (Dec. 31) 1926. Partial Index

*Biliary Cryptotoxins. H. Vincent.—p. 1525.
*Experimental Arterial Hypertension of Aortic Origin. P. Dodel.—p. 1536.
*Verminal Origin of Cancer in Sheep. M. Aynaud.—p. 1540.
*Curable Form of Tuberculosis from Filtrable Virus. H. Durand et al.—p. 1545.
*Equilibrium of Minerals and Experimental Edema. E. Aubel et al.—p. 1557.
*Influence of Epinephrine on the Water of Muscles and Organs. C. I. Parhon et al.—p. 1567.
*Action of Histamine on Fatigued Muscle. M. Ferreira de Mira.—p. 1589.
*Lesion of Parathyroids in Osteitis Fibrosa. H. Parreira and L. de Castro Freire.—p. 1590.
*Eosinophilia in Osteitis Fibrosa. H. Parreira and L. de Castro Freire.—p. 1592.
*Helminthicide Property of Garlic. J. Toscano Rico.—p. 1597.
*Action of Carlsbad Water on Metabolism of Glucides. O. Kauffmann-Cosla and R. Zörkendörfer.—p. 1606.
*Action of Carlsbad Water on Elimination of Intermediary Glucide Bodies. O. Kauffmann-Cosla and R. Zörkendörfer.—p. 1609.
*Properties of Anhepatic Bilirubin. P. Meyer.—p. 1611.

Significance of Biliary Cryptotoxins.—Vincent found that colon bacillus toxin mixed in vitro with ox bile loses its toxicity within a few hours. Rabbits injected with 3 cc. of bile mixed with 200 lethal doses of tetanus toxin survived. Repeated injections of either of the mixtures induced immunity in the animal. These mixtures of bile and bacterial toxins represent cryptotoxins, which protect the digestive tract in normal conditions.

Experimental Arterial Hypertension of Aortic Origin.—Dodel devised an apparatus representing a rubber model of a heart, which contracted rhythmically through the action of a motor driven by water power. The heart was connected with two tubes provided with valves similar to the aortic and mitral valves. At its origin, the aortic tube was divided into two branches, the diameter of each of which equaled that of the common trunk. The length of each of the branches was 0.3 M. At the distal end the branches were reunited into one tube. The latter was connected with a series of rubber tubes representing the arterial and venous systems. One of the aortic branches was of soft rubber, the other of hard. Forceps enabled the experimenter to pass water through either branch without modifying the cardiac rhythm or contractions, or the peripheral resistance. Passage of liquid through the rigid tube occasioned rise in the systolic pressure, while the diastolic pressure tended to fall. The experiment confirms clinical observations on the rôle of aortic elasticity in systolic arterial hypertension.

Verminal Origin of Pulmonary Cancer in Sheep.—Aynaud examined the carcasses of four sheep affected with cancer of the bronchi. In three, nematode larvae were found in the bronchi. He believes that the worm is probably a direct factor in the production of cancer, rather than an agent favoring inoculation of an unknown virus. There appears to be a connection between the presence of larvae in cancerous tumors and the rôle of embryonic juices in tissue culture. During its immigration the worm may become lodged temporarily in a bronchus and it may disappear from there without leaving other traces than the cancerous lesion. This, evidently, is what had occurred in the fourth sheep.

Curable Form of Tuberculosis Caused by Filtrable Virus.—Guinea-pigs were inoculated with filtrates of human tuberculous products. The animals did not develop any lesion at the site of injection nor in the corresponding glands. Nevertheless the animals started to lose weight. The loss of weight, which continued for about two months, was in some cases equal to a fourth of the animal's initial weight. After this the weight curve gradually rose and finally reached normal. A year after the inoculation the animals were alive and appeared healthy. Durand, Oury and Benda point out

that the period of emaciation corresponds to the antiallergic phase and the period of regaining weight to the allergic phase.

Rôle of Mineral Balance in Experimental Edemas.—Aubel, Mauriac and Boutiron's observations were made on rabbits with induced nephritis, edema or dry chloride retention. Changes in the proportion of sodium and chlorine in the organism (blood and muscles), proved to be a predominant factor in both types of nephritis. There was also a reduction of potassium. Experiments now going on point to an abnormal amount of phosphorus and calcium in the organism. Thus hydration or dehydration of tissues in nephritis appears to be the result of antagonism of ions.

Content of Water in Muscles and Organs Following Injections of Epinephrine.—Repeated injections of epinephrine into animals caused reduction of water in the muscles with increase of water in the kidneys, pancreas, liver and suprarenals. Parhon, Kahane and Marza emphasize the fact that the action of epinephrine is similar to that of thyroid extract.

Action of Histamine on Fatigued Muscles.—The gastrocnemius of frogs was subjected to excitation, bringing about extreme fatigue of the muscle. A solution of histamine was then injected. Contractility reappeared in the fatigued muscle. The effect of the histamine lasted more than two hours, although excitation of the muscle continued. The action of histamine, like that of epinephrine, is due exclusively, Ferreira de Mira asserts, to the induced peripheral vasodilatation in the muscle.

Changes in Parathyroids in Osteitis Fibrosa.—Parreira and Castro Freire studied the histologic changes in the parathyroids of a young man with generalized osteitis fibrosa. The lesions testified to hyperplasia and hyperfunctioning of the glands. Examination of the patient's blood revealed an increased number of eosinophils. Naegeli considers eosinophilia as a favorable sign and eosinophilopenia as an unfavorable sign in the prognosis of osteomalacia. The case reported and a similar case of Sauer's were fatal. Obviously, the eosinophil picture is not of prognostic value in the disease.

Helminthicide Property of Allium Sativum.—Toscano Rico's researches were made on ascarids. There was evidence that garlic causes paralysis of the worm, preceded by a phase of intense irritation. A 10 per cent extract of garlic kills the ascarid in forty-five minutes. The action of alcoholic extract was stronger than that of ethereal extract. Allyl sulphate appeared to be the active substance of the garlic. It remains to be ascertained whether the sulphur or the allyl kills the worm.

Action of Carlsbad Mineral Water on Glucide Metabolism.—The influence of Carlsbad water was studied by Kauffmann-Cosla and Zörkendörfer in diabetic patients. In the course of treatment with the water the sugar in the urine became considerably reduced or even disappeared. At the same time, the "unoxidized carbon" decreased in the urine. In mild diabetes transformation of the glucose and the "unoxidized carbon" into carbon dioxide occurred after the first administration of the water. In further researches the endeavor was made to establish the action of the water on the metabolism of intermediary glucide products, especially of acetic aldehyde. In six patients with moderate diabetes, the elimination of acetic aldehyde increased during the first few days of using the water, after which it returned gradually to normal. This proves that glucose and unoxidized carbon that disappear from the urine are not retained in the organism; they become oxidized. Evidently, the respiratory quotient increases under the influence of Carlsbad water.

Properties of Bilirubin Not Originating in the Liver.—Meyer's observation was made on three cases of hemolytic jaundice. The indirect reaction (albumin of the blood serum, precipitated by alcohol, is mixed with Ehrlich's reagent) indicated the presence of from 5 to 9 units of anhepatogenic bilirubin in the blood serums of the patients. In all these cases, bilirubinemia was above the usual renal threshold for the hepatic bilirubin, which ranges between 3 and 4 units. Bilirubin could not be detected in the urine of any of the patients. These facts confirm the theory that the kidneys are impermeable for anhepatogenic bilirubin.

Journal d'Urologie Médicale et Chirurgicale, Paris

22: 353-448 (Nov.) 1926

*Remarks on Paulesco's Statements. L. Ambard.—p. 353.
*Are Ambard's Laws Erroneous? J. Goldberger.—p. 359.
Removal of Bladder in Cases of Malignant Tumor. S. P. Fedoroff.—p. 370.
Histologic Structure of Tumors and Postoperative Mortality. A. J. Scholl and J. Verbrugge.—p. 379.
Epidural and Sacrolumbar Anesthesia in Urology. S. Laskownicki.—p. 390.

Ambard's Remarks on Paulesco's Statements.—Ambard analyzes two statements made by Paulesco, which he calls Paulesco's laws. The first law states that the urinary output is directly proportional to the urea of the blood, the concentration of urea in the urine being constant. The second law states that the output of urea does not depend on the volume of the urine, the concentration of the blood urea remaining constant. Ambard refers to authors in various countries, who confirmed his law—namely that the output of urea increases with the square of the urea concentration of the blood.

Are Ambard's Laws Erroneous?—Goldberger concludes that Ambard's ureosecretory formula is constant in healthy persons. Changes in the cardiovascular apparatus, in blood circulation and in the endocrine glands influence the urinary output of urea. When these extrarenal factors are excluded, a high Ambard's constant points to disturbed excretion of urea due to renal insufficiency. This is observed in uremic nephritis or in mixed forms of nephritis. Thus the ureosecretory constant is especially significant in surgical diseases of the kidneys, in which the above mentioned forms of nephritis are frequent.

Paris Médical

63: 117-152 (Feb. 5) 1927

Roentgen-Ray Study of Hilum of the Lung. R. Chaperon.—p. 117.
*Roentgen-Ray Diagnosis of Sinusitis. L. Baldenweck and C. D. de Prades.—p. 127.
Roentgen-Ray Pictures of the Pituitary Fossa. M. Joly.—p. 131.
*Roentgenographic Visibility of Fetal Skeleton. A. Blanche.—p. 136.
Roentgen-Ray Diagnosis of Appendicitis. G. Guénaux and P. Vasselle.—p. 141.
Clinical Value of Stereoroentgenography. R. Gauillard.—p. 147.

Roentgen-Ray Diagnosis of Sinusitis.—Baldenweck and Prades' experience includes several hundred roentgen-ray examinations of the skull. If the patient is placed in a proper position, the sphenoid and ethmoid sinuses are as distinct on the plates as are the frontal and the maxillary sinuses. In one of the Hirtz positions, the patient lies on the back with shoulders raised and head bent back so that the vertex rests on the film (vertex-chin plate). This position is recommended for examination of the sphenoid and ethmoid sinuses. In the other Hirtz position, the patient lies on the abdomen, the chin resting on the film (chin-vertex plate). With this exposure the frontal and sphenoid sinuses are visible. In the anterior position (anterior skull plate), the patient's nose and the chin rest on the film. This gives the best picture of the mastoid process. The lateral position (lateral skull plate) shows the anteroposterior dimensions of the frontal and sphenoid sinuses, and the exact form of the pituitary fossa. The authors advise that roentgen-ray examination of the cranium should supplement clinical examination and diaphanoscopy in laryngologic practice.

Roentgen-Ray Visibility of the Fetal Skeleton in Utero.—Blanche's researches showed that the fetal skeleton in the uterus does not appear clearly in the roentgenogram before the age of three and a half months. In other words, diagnosis of pregnancy by the roentgen ray can be made about three weeks before the appearance of clinical signs of the fetus proper. In the second half of pregnancy, roentgenograms may indicate the presentation and position of the fetus. They may show the respective positions of the fetuses in twin pregnancy. In Möller's case, three fetal heads were easily distinguished on the plates. Roentgen-ray examination may reveal a hydrocephalus, monstrosity, and overriding of bones pointing to death of the fetus. Roentgenography can be used in diagnosis of ectopic gestation, and in differentiation of

a pelvic tumor from pregnancy. Exposures should be made with the pregnant woman lying on the abdomen or on the side, never on the back.

Presse Médicale, Paris

35: 177-192 (Feb. 9) 1927

*Gallbladder Containing Calculus and Lipoid Mucus. A. Bergeret and J. Dumont.—p. 177.
*Lymphogranulomatosis of the Spine. C. I. Urechia and I. Goia.—p. 179.
Lead Treatment of Cancer. P. Pagniez.—p. 181.

Lipoids in the Contents of a Gallbladder Containing a Calculus.—Bergeret and Dumont describe a case of gallstone, in which the gallbladder contents presented the aspect of mucopus. The fluid proved to be free from bacteria. There was diffuse sclerosis of the organ and a superficial ulcer in the fundus. At the site of the ulcer, the connective tissue was infiltrated with macrophages containing lipoid corpuscles. The cell reaction was manifest not only in the mucosa and submucosa, but also in the epithelium. It could not be established whether the ulcer or the calculus was primary. However, it is beyond doubt that the lesion contributed to peripheral increase of the stone. The metabolism of lipoids in the gallbladder in this case was the reverse of what is found in normal conditions. The mucosa usually resorbs cholesterol and then eliminates it by the lymphatics, in this case, cholesterol had been accumulated in the mucosa, whence it was transmitted to the bile by means of the macrophages.

Lymphogranulomatosis of the Spine.—Urechia and Goia believe that lymphogranulomatosis affects the spinal cord secondarily. This occurs by the way of the lymphatics or the blood stream. Granulomas of the thorax or of the abdomen spread to the spinal cavity through the intervertebral foramina. Granulomatous tissue may involve the vertebrae, the epidural space, the dura mater and the spinal cord. The disease is revealed clinically by symptoms of anemia of the spinal cord, of radiculitis or of transverse myelitis. Granulomas of the spine may simulate Pott's disease, the differential diagnosis is made by the roentgen ray. The onset is gradual, rarely sudden. Roentgen-ray treatment brings only transient improvement. Two cases are reported.

Archivos de los Hospitales, etc., Buenos Aires

2: 14-374 (Dec.) 1926. Partial Index

*Treatment of Inflammatory Effusion with Calcium Chloride. D. Priano.—p. 17.
*Results of Separating Children from Tuberculous Mothers. P. de Elizalde.—p. 25.
*Aspiration of Vitreous Body in Glaucoma. A. Oyenard.—p. 63.
Bladder Calculi from Foreign Body. C. Velasco Suárez.—p. 343.

Calcium Chloride in Tuberculous Effusions.—Serofibrinous effusions developed in five cases of active pulmonary tuberculosis. Priano tried intravenous injection of crystallized calcium chloride. The dose was 1.5 Gm. The course embraced fifteen injections, given semiweekly. The result was excellent in four cases; in the fifth, only fair. Blum suggested a similar method of treatment, which, however, was more complicated.

Results of Separating Children from Tuberculous Mothers.—Elizalde traced the end results in the 333 children of tuberculous mothers who were taken to the Foundling Home when less than 6 months old. The percentage of infection increased with the length of time the children had remained at home. In children taken away on the day of birth, it was 3.44; between the first and tenth day, 12.12; between the tenth and thirtieth day, 22.2; between one and three months, 33.81; between three and six month, 41.81. All the infected, 21.62 per cent, died. Among the 128 infants removed from their homes before the tenth day of birth, only 30.46 per cent survived more than one year.

Vitreous Puncture in Glaucoma.—In fifty-six patients with painful total glaucoma, Oyenard aspirated the vitreous body seventy-seven times. In twenty-nine pain subsided after the first aspiration. In the others the puncture had to be repeated, in some as many as four times. In three the method failed and enucleation was required.

Semana Médica, Buenos Aires

34: 65-128 (Jan. 13) 1927

Acute Yellow Atrophy of the Liver in a Child. M. Acuña and F. de Filippi.—p. 65.
New Pyrogenic Tests for Malic, Tartaric and Citric Acids. J. A. Sánchez.—p. 73.
Cure of a Lumbar Fistula Following Nephrostomy by Permanent Ureteral Catheter. J. Salleras.—p. 76.
*Adsorption by the Skin. A. A. Fernández.—p. 77.
*Morphologic Identification of Spirochetes. J. Bacigalupo.—p. 84.
Surgical Treatment of Uterine Cancer. R. F. Coulin.—p. 85.
Toxic Effects of Arsphenamine. M. Arana.—p. 88.
Chronic Total Inversion of the Uterus. T. Areta and E. Carrá.—p. 90.
Case of Skin Leishmaniasis. C. Arias Aranda.—p. 94.
Dupuy Dutemps' Operation in Chronic Dacryocystitis. J. González Mujica.—p. 96.
Hematologic Technic. P. T. Panza and C. Ducco.—p. 99.
*A Surgical Instrument of the Puelches. R. Faggioli.—p. 103.

Biologic Significance of Skin Adsorption.—Fernández' adsorption experiments dealt purely with the human skin. Bandages moistened with phenol (0.5 per cent), resorcin or betanaphthol (0.5 or 1 per cent) were applied to the skin and left in situ for twenty-four hours. The skin scales were scraped off and examinations made to determine the presence of the drug. Twenty-four hours after the bandage had been removed the specimens were positive as to phenol. With 0.5 per cent resorcin or betanaphthol adsorption was slight, but it increased considerably when a 1 per cent strength was applied. The existence of cutaneous adsorption must therefore be kept in mind under certain circumstances.

Uselessness of Morphologic Identification of Spirochetes.—Mello suggested a "morphologic index" for identifying spirochetes. The method consists in measuring the length and the number of spirals in 100 organisms and dividing the first by the second. When Bacigalupo tried the "index" on bronchial spirochetes, the result in spirochetes isolated directly from the sputum differed from that in spirochetes obtained from inoculated guinea-pigs. The "index" as determined by Pons also varied widely from that of Mello. Mello's method has apparently no practical value.

Antique Indian Surgical Instrument.—A photograph reproduces the quartzite lancet found by Faggioli on the Necochea dunes, an old camping ground of the long extinct Puelche Indians. The appliance belongs to the so-called Moustier type. Operations with such a rough tool cannot have been very comfortable for the patient.

Archiv für exp. Pathologie und Pharmak., Leipzig

119: 1-128 (Dec.) 1926

*Maximum Hypoglycemia Without Administration of Insulin. E. Geiger and L. Szirtes.—p. 1.
Effect of Morphine on the Spinal Cord of Decapitated Cats. W. Blume.—p. 24.
Gas Exchange of Skeletal Muscles in Tonus. S. Janssen.—p. 31.
Effect of Barium Chloride on Skeletal Muscles. H. Fühner.—p. 56.
Effect of Hormones on Hepatic Vessels. W. Lampe and J. Méhes.—p. 66.
Studies on the Surviving Liver of Mammals. W. Lampe and J. Méhes.—p. 73.
*Effect of Liver Extracts on Diuresis. W. Lampe.—p. 83.
The Action of Insulin. E. Grafe et al.—p. 91.
The Striped Muscles and Regulation of the Water Metabolism. R. Baer.—p. 102.
Effect of Insulin and Permeability for Sugar of Human Kidneys. H. Elias and J. Gödemann.—p. 119.
Vessel for Experiments with Surviving Organs. F. Richter.—p. 127.

Maximum Hypoglycemia Produced Without Administration of Insulin.—In experiments on splanchnicotomized rabbits, previously fed with hay and beets, Geiger and Szirtes found that injection of colon bacillus toxin, or of 1 mg. of atropin per kilogram of body weight considerably decreased the blood sugar and was followed by convulsions. The hay and beet forage seems to produce the effect by inhibition of the glyconeogenetic function. The symptoms occurred only in splanchnicotomized animals and were abolished by injection of dextrose or epinephrine. Hypoglycemia was produced in a similar way in rabbits, with the left suprarenal denervated, the right extirpated, the left splanchnic nerve remaining intact. The effect of atropin on the blood sugar concentration is twofold: on the one hand, it produces hyperglycemia by stimulating the central nervous system, which action is eliminated by splanchnicotomy; on the other hand, it produces hypogly-

cemia in splanchnicotomized animals, probably by inhibition of glyconeogenesis. The symptoms observed in the hypoglycemic rabbits corresponded completely to those that occur after injection of insulin.

Effect of Liver Extracts on Diuresis.—Lampe extracted beef liver with acid alcohol and by precipitation with ammonium sulphate obtained from the extracts a substance which, when injected intravenously into dogs, markedly inhibited excretion of urine.

Archiv für Kinderheilkunde, Stuttgart

80: 1-79 (Dec. 15) 1926

*Light and Color Perception in Premature Infants. A. Peiper.—p. 1.
*Feces and Cylindruria After Administration of Hydrochloric Acid Milk. F. von Bernuth and J. Duken.—p. 21.
*Treatment of Thrush with Ferric Chloride. G. Abraham.—p. 26.
*Fetal Microcephalia Due to Roentgenotherapy. J. Zappert.—p. 34.
Institutional Care and Infectious Diseases. H. Weil.—p. 51.

Light and Color Perception in Premature Babies.—Peiper's examinations of a prematurely born infant in the second month of life in relation to its adaptation to light showed that red, green, yellow and blue possessed the same relative light values as in the case of adults. The sensitiveness to light rays of different wave lengths increased considerably in darkness. It was possible to demonstrate vision in twilight, which speaks for a full function of the rods in the retina in these premature babies.

Feces and Cylindruria After Administration of Milk Containing Hydrochloric Acid.—Bernuth and Duken noted cylindruria in 60 per cent of twenty-three children who had been given a mixture of 740 cc. of milk and 260 cc. of a tenth-normal solution of hydrochloric acid, containing 5 per cent of sugar. Albumin was not present in the urine. The mixture usually had a favorable influence on the composition of the feces and prevented dyspeptic disturbances.

Treatment of Thrush with Ferric Chloride.—Abraham's patients, thirty-three children suffering from thrush, responded to application of a solution of from 2.5 to 3.0 per cent ferric chloride in from two to four days, on the average. Higher concentrations of ferric chloride produced irritating effects. Experiments on animals showed that the virulence of the infection was considerably decreased by the treatment.

Fetal Microcephalia Due to Roentgen-Ray Irradiation.—Zappert's paper is based on twenty cases collected from the literature. He asserts that fetal microcephalia occurs in at least 50 per cent of cases in which irradiation of the uterus took place during the first months of pregnancy. The history of the cases and animal experiments clearly show that the condition is caused by fetal injury due to the roentgen rays. Irradiation of the ovaries before conception is not followed by such a change in the fetus. The therapeutic irradiation of pregnant women should be avoided, and abortion should be induced in case it has been done.

Dermatologische Wochenschrift, Leipzig

83: 1791-1818 (Dec. 11) 1926

Linear Dermatoses. A. Jordan and N. Latko.—p. 1791.
*Iodine Poisoning. K. Holm.—p. 1796.
Epidermal Sporotrichosis. T. Benedek.—p. 1803. C'tn.

Iodine Poisoning.—In experiments on rabbits Holm found that the size of the dose is not the only factor that influences the severity of iodine poisoning. Other things to be considered are the behavior of the thyroid, the factors which liberate iodine in the body and the reaction of the tissues to the free iodine. The carbonic acid of the tissues and the nitrites found in the body secretions and fluids, or formed pathologically by bacteria, liberate iodine from its usual combinations. Thus susceptibility to iodine poisoning varies in different individuals and in the same individual at different times. It is not possible to state a definite lethal dose for the human being; it may be under 0.2 mg. or more than 43.6 Gm. per day. In animal experiments it is possible to increase the toxicity of iodine considerably by raising the carbon dioxide tension of the blood. Iodine is, apparently, a cell poison, affecting primarily the more highly differentiated cells.

Monatschrift für Geb. und Gynäkologie, Berlin

75: 233-322 (Dec.) 1926

*Transverse Presentations. H. Kamniker.—p. 233.
Postpartum Hemorrhage. J. Brock.—p. 250.
*Genital Hypoplasia from Malnutrition During Puberty. H. Küstner.—p. 257.
Technic of Vaginal Incision. P. Braun.—p. 261.
Experiences with Blood Transfusion. E. Vogt.—p. 262.
Congenital Skin Defects in the New-Born. F. Heinrichsbauer.—p. 267.

Transverse Presentations.—If the bag of waters is ruptured, version should not be unduly delayed with the idea of following this maneuver immediately by extraction; the danger of impaction or of rupture of the uterus is too great. Nor does Kammiker approve of forced extraction after version unless the fetal heart tones remain bad. In placenta praevia, immediate extraction is absolutely contraindicated. In a material of 130 transverse presentations, transperitoneal cesarean section was performed eight times; the cause of the false presentation in these cases was contracted pelvis. All the mothers thus operated on lived, and all the children were delivered alive; one died three days later from pneumonia. Spontaneous version took place in four cases, spontaneous evolution in three, *partus con duplicato corpore* in two. The children in the last named deliveries were premature and abnormally small; one was born alive but died within an hour. If impaction has taken place, embryotomy is the quickest and safest procedure.

Genital Hypoplasia from Malnutrition.—Between 1919 and 1925, the percentage of patients with hypoplasia of the genital organs in the Women's Clinic of Halle University rose from 0.8 to 1.5. The majority of these patients were born between 1898 and 1905 and were thus in the period of puberty during the years of the war. Küstner is inclined to ascribe undernourishment or carbohydrate diet with vitamin deficiency during puberty as the cause of the hypoplasia in many of these women.

Münchener medizinische Wochenschrift, Munich

74: 49-94 (Jan. 14) 1927

*Hormonal Sterilization of Female Animals. L. Haberlandt.—p. 49.
Treatment of Chronic Conjunctivitis. A. Peters.—p. 49.
*Lateral Granular Conjunctivitis. H. Koopmann.—p. 50.
Observations in the Mountains. A. A. Friedländer.—p. 52.
Scarlet Fever Serum. H. Klima.—p. 55.
Dislocation Fracture of Hip. P. Caan.—p. 56.
Chronic Periarticular Inflammation. P. Mitschke.—p. 58.
*Passive Transmission of Idiosyncrasy to Drugs. M. Lang and O. Dér.—p. 59.
*Autohemotherapy of Pulmonary Tuberculosis. W. Peus.—p. 60.
Nonspecific Treatment. T. Teramoto.—p. 61.
The Meinicke Test. F. Szirmai.—p. 62.
Bismuth Treatment in Therapeutic Malaria. J. Vonkennel.—p. 64.
Medicolegal Obstetrics. M. Hofmeier.—p. 66.
Urinals. Thilenius.—p. 67.
Obstetric Leg Holder. J. Wieloch.—p. 68.
Meinicke Microreaction. K. Strelow.—p. 69.
Deforming Osteitis. D. Campbell.—p. 71.
Obstetric Box. R. Freund.—p. 73.
Aesop's Medical Fables. A. A. M. Esser.—p. 73.
*Treatment of Paronychia. A. Krecke.—p. 74.

Hormonal Sterilization of Female Animals.—Haberlandt was able to keep mice sterile by injecting an extract of the ovary or placenta of gravid cows. Administration by mouth was also successful.

Lateral Granular Conjunctivitis.—Koopmann confirms the existence of a conjunctivitis localized in the lateral part of the conjunctiva of the lower lid. He considers it a sign of "status lymphaticus." It is not a sign of tuberculosis, as Saathoff thought.

Passive Transmission of Idiosyncrasy to Drugs.—Lang and Dér injected animals with the serum from a patient with idiosyncrasy to quinine. The animals became hypersensitive to the drug.

Autohemotherapy of Pulmonary Tuberculosis.—Peus had negative results from treatment of tuberculous patients with their own blood or serum.

Treatment of Paronychia.—Krecke had excellent results with Denks' treatment of paronychia: a thick layer of mercuric ointment is smeared over the finger and kept on for one week. The pains rarely last longer than one day.

Wiener klinische Wochenschrift, Vienna

40: 45-76 (Jan. 13) 1927

Avitaminoses. W. Knoepfelmacher.—p. 45.
History of Treatment of Syphilis. W. Kerl.—p. 47. C'cn.
*Calmette's Preventive Immunization Against Tuberculosis. R. Kraus. —p. 49.
Colloid Chemistry and Medicine. W. Pauli.—p. 54.
Rare Cause of Diastolic Aortic Murmurs. R. Fleckseder.—p. 55.
*Cheyne-Stokes Breathing and Injection of Phosphates. E. Adler et al. —p. 56.
Epulis and Radium. L. Kumer and H. Wolf.—p. 57.
Pospischill's Aphthoid. Feyrter.—p. 58.
Apparatus for Pneumothorax and Pneumoperitoneum. M. Weiss.—p. 61.
Prognosis of Vomiting of Pregnancy. F. Kermauner.—p. 62.
Blood Groups and Heredity. K. Nather.—p. 63.
Normal and Pathologic Instincts of Children. J. K. Friedjung. Supplement.—pp. 1-8.

Calmette's Preventive Immunization Against Tuberculosis.—Kraus injected comparatively large amounts (20 mg.) of Calmette's B. C. G. culture into the peritoneum of guinea-pigs. After three to four weeks he found in the peritoneum, spleen and other organs nodules containing acid-fast bacilli and resembling true tubercles except for vascularization of the tissue, abundance of leukocytes and absence of caseation. The changes regressed spontaneously in a few months. The bacilli could be cultivated from the organs but implantation of these organs did not infect other animals. He concludes that the vaccine is slightly virulent and that its protective value is probably due to this fact. It seems that it is innocuous to children and calves, but he thinks that it needs to be more thoroughly tested before it is released for general practice.

Cheyne-Stokes Breathing and Injection of Phosphates.—In eight out of ten cases of Cheyne-Stokes breathing, Adler, Elias and Spitz observed improvement from an intravenous injection of 80 to 100 cc. of a normal solution of acid sodium phosphate. The amelioration began from three to four hours after the injection and lasted for from one to seven days.

Zeitschrift für Tuberkulose, Leipzig

46: 455-514 (Dec.) 1926

*Determination of the Number of Living Bacteria in a Suspension of Tubercle Bacilli. B. Lange.—p. 455.
*Pulmonary Tuberculosis in Patients With and Without Hereditary Taint. F. Bredow.—p. 477.
Activity of Sanatoriums and of Their Directors. J. Ritter.—p. 488.
Reply. K. H. Blumel.—p. 490.

Determination of the Number of Living Bacteria in a Suspension of Tubercle Bacilli.—Lange suspended in a solution of sodium chloride from 60 to 100 mg., moist weight, of tubercle bacilli taken from a glycerin broth or egg serum culture less than three weeks old. Suspensions were prepared, containing from 0.1 to 0.000,000,01 mg. of bacteria per cubic centimeter of sodium chloride. Of these suspensions 0.2 cc. was diluted with sodium chloride and inoculated subcutaneously or intracutaneously into guinea-pigs. Four hundredths cubic centimeter of the suspensions was sown on the surface of an egg serum medium and the growing colonies were observed for four weeks. The number of colonies corresponded with sufficient exactness to the number of living tubercle bacilli present in the suspension. Infection occurred in the animals not only after subcutaneous or intracutaneous, but also after tracheal inoculation, although, according to this culture procedure, only one living tubercle bacillus was present in the suspension. The number of primary foci present in the lungs of the animals after tracheal injection of a diluted bacterial suspension corresponded to the number of living tubercle bacilli injected. In determining the virulence of tubercle bacilli, it is important to know the number of living bacteria per unit of weight.

Course of Pulmonary Tuberculosis in Patients With and Without Hereditary Taint.—Among Bredow's 2,216 patients, 40.5 per cent had an hereditary taint. The results of sanatorium treatment were the same in both groups of patients. Among 185 adult patients less than 100 pounds in weight, presenting the same percentage of tainted and untainted cases, the results were about 10 per cent better in the patients with an hereditary taint. Among patients between 16 and 25 years of age, the results were 11 per cent better in the tainted than in the untainted cases.

Zentralblatt für Chirurgie, Leipzig

53: 3153-3208 (Dec. 11) 1926

*Roentgenotherapy of Trigeminal Neuralgia. Breitländer.—p. 3154.
*Transplantation of the Thyroid of an Exophthalmic Goiter Patient into a Cretin. N. Bogoras.—p. 3155.
Closed Reduction of Old Dislocation of Lower Jaw. U. Karell.—p. 3160.
Pirogoff's Foot Amputation. Zur Verth.—p. 3161.

Roentgenotherapy of Trigeminal Neuralgia.—Breitländer describes the practice of the Rostock university surgical clinic. The gasserian ganglion alone is irradiated. The technic comprises 182 kilovolts, 4 milliamperes, filtration through 0.5 mm. of zinc plus 1 mm. of aluminum, focal distance of 30 cm., diameter of field of irradiation, 5 cm. The dose on the field of irradiation is 30 per cent; the focal dose at the ganglion from about 10 to 15 per cent of the erythema dose. This treatment is repeated as found necessary, usually once or twice even in the most successful cases. An interval of four weeks is allowed to elapse between irradiations. When repetition of the irradiation is contraindicated because of danger of injury to the skin, an effort is made to reach the ganglion from the other side. Fifty-seven cases have been treated in this manner and Breitländer maintains that it is the safest method of treating trigeminal neuralgia. Patients should be warned that during the first twenty-four hours the reaction—increase in the pain—will be severe.

Transplantation of the Thyroid of an Exophthalmic Goiter Patient into a Cretin.—Bogoras transplanted thyroid tissue from a woman, aged 28, with exophthalmic goiter into a girl, aged 14, with myxedematous cretinism. The right half of the thyroid, with the isthmus, was used. The superior thyroid artery of the transplant was sutured end-to-side to the common carotid artery of the recipient. The first signs of improvement in the cretin appeared two weeks after the operation. Now, at the end of six months, she has become cleanly and coquettish and takes pleasure in bright colored clothes. She chats with the other patients, showing a distinct preference for the men, and has begun to learn to read. She is particularly good at understanding and explaining pictures. Before the operation she was entirely apathetic; she did not recognize the members of her family and had to be fed like a baby. The skin has become moist and smooth, the long bones are longer and more slender, she has grown 12 cm. in six months (four times the usual rate for her age) and gained 4 Kg. in weight. The pulse has increased from 65 to 90 or 100 and is arrhythmic—evidence that the transplanted gland still functions.

Ugeskrift for Læger, Copenhagen

89: 73-90 (Jan. 27) 1927

*Petroff's Medium and Diagnosis of Tuberculosis. K. A. Jensen and E. Husted.—p. 73.
*Excretion of Albumin in Chronic Nephritis. J. Frandsen.—p. 75.

Petroff's Medium and Diagnosis of Tuberculosis.—Jensen and Husted examined cerebrospinal fluid, pleural exudates, scrapings from the mastoid, urine, pus, puncture fluid and sputum of tuberculous guinea-pigs. They assert that Petroff's medium is not a substitute for animal inoculation in the diagnosis of tuberculosis. It is a valuable supplement to confirm the diagnosis in cases in which inoculation of guinea-pigs yielded negative results. It is also useful in the diagnosis of tubercle bacilli in sputum in clinically doubtful cases, when the results of microscopic examination are negative.

Excretion of Albumin in Patients with Chronic Nephritis.—By varying the protein content of the food of four patients suffering from chronic nephritis, Frandsen found that increase of proteins in the diet was followed by increase in amino acids in the blood and of albumin in the urine. Decrease of proteins in the food had the opposite effect. The concentration of albumin in the urine was dependent on the diuresis. Administration of urea had no influence on the excretion of albumin.